

**THE IMPACT OF THE JOHANNESBURG STOCK EXCHANGE'S  
ALTERNATIVE EXCHANGE ON LISTED FIRM'S  
PERFORMANCE AND ENTREPRENEURSHIP**

by

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A thesis submitted in accordance with the requirements  
for the degree of

**DOCTOR OF PHILOSOPHY**

in

**MANAGEMENT STUDIES**

**(ENTREPRENEURSHIP)**

at the

**UNIVERSITY OF SOUTH AFRICA**

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March 2022

## DECLARATION REGARDING PLAGIARISM

I, the undersigned, hereby declare that the work contained in this research proposal entitled:

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## ACKNOWLEDGEMENTS

First and foremost, I would like to thank my supervisor, Prof. Evelyn Chiloane-Phetla who agreed to promote this thesis and painstakingly reviewed and contributed to the timely completion of this thesis. When my focus was waning, you were my inner strength and inspiration. Thank you! Besides, I would like to acknowledge the support of the University of South Africa's Financial Aid Bureau and the College of Graduate Studies for granting me a postgraduate Master's & Doctoral Bursary that facilitated the completion of both my Master's degree and this PhD study, without which it would have been a mission impossible. You gave me the license to fame and a wonderful opportunity to study and represent this prestigious university at both local and international conferences. For that I say a big thank you too!

Furthermore, I would like to thank the Academy of International Business (AIB) for granting me the prestigious AIB travel stipend award. Most especially, I would like to thank Prof. Elizabeth Rose [and her entire team] who supported me morally and financially through thick and thin. Also, a big thank you to Prof. Abel & Prof. (Mrs.) Mary Kinoti, Prof. Yaw Debrah, Prof. Ifedapo Adeleye, and all the conference chairs and participants at the AIB annual conferences where I presented my papers [and the AIB Doctoral Consortia too]. Words only cannot quantify my sincere appreciation. More so, I would like to thank the Academy of African Business and Development (AABD) conference participants for all their insightful comments about this project. The assistance and support of Ms. Nicky Newton-King, former CEO of the JSE who granted permission for me to access the secondary datasets is very well-appreciated. Likewise, the AltX listed firm's CEOs/directors/top management team members who participated in both the survey and interview phase of this study are also very highly appreciated.

Thirdly, I wish to express my profound appreciation to all my colleagues and students at the Federal Polytechnic Idah, Kogi State, Nigeria who supported me in one way or the other. Most notably, I would like to appreciate Dr. Baba D. & Dr. (Mrs.) Edna Danjuma, Dr. Akowe Achimugu, Mr. Peter Danjuma, Mr. J.A. Agada, Dr. Peter O. Odekina, Mr. Alfred Amodu, Dr. Innocent Otache, Dr. Ifeoma J. Echukwu, Dr. Umar Kadiri, Dr. Awulu Johnson, Mr. Amana Mohammed, Dr. Ugbede Onalo, Mr. Audu Yakubu, Mr. Ibrahim M. Audu, Mr. Paul Haruna, Mall. Aliyu M. Kudu, Mrs. Acho Yunusa, Mrs. Eleojo Inekwe, Mrs. Akwara Ngozi, Ms. Joy Obadoba, Mr. Onuh ThankGod, Mr. Abuh Sumaila, Mr. A. Abel, Ms. Ruth C. Okoro, Mr. Peter Audu, Mr. Michael Odoh, Mr. Jerry Iko, Mr. Kerimu Alhassan, Mr. Sunday Ocheje, Shina, Ijeoma, Sanusi, Rachael, Akoji, Okpanachi, Beatrice, Mustapha and everyone who supported me in one

way or the other, but for the limitation of space were not acknowledged here. Thank you.

Fourthly, I would like give a big thank you to my fellow Unisa colleagues who were super supportive during my PhD study, most especially Dr. Nthabeleng Mmako, Dr. Matthew Akinbinu, Mrs. Elizabeth Goosen, Mrs. Elena Swanepoel, Mr. Mulalo Olamijulo, Mrs. Vivian Mbulayeni, Mr. Vincent Moloi, Mrs. Leanne Brown and my mentee Mr. Chukwudi Nwobodo who is now a super star at Simon Fraser University, Canada. In the same way, I would like to thank those who assisted me during my undergraduate days at the Lagos State University, Ojo, Nigeria. Specifically, I would like to thank my classmates, Dr. Elegunde Abayomi who was always willing to assist no matter how busy he was. Besides, I would also like to thank Mr. Yusuf Olateju Ogunfowora and Mr Blessing Odinakachi Nwigwudu (ACA) who both served as my class representatives at one point or the other, as well as my pillar Alh. Babakarah Maikudi and our Students' Union vice-president, Comrade Olugbenga Adetunji. Being a country boy, I know what it meant to school in the big city, Lagos. I therefore appreciate my teachers without whom I would not have gone this far. Most notably, Prof. S.O. Fajonyomi, Dr. Yusuf Babatunde Rahman (alias Yusuf of Africa), Prof. Muritala Awodun, Prof. Ajonbadi Hakeem, Dr. Olubayo Thomas Olajide, Dr. Clement Olajide Jongbo, Associate Prof. Raheem Olasupo Akewushola, Dr. Nureni Sanusi Alaka, Dr. Abayomi O. Adeoye, Dr. Rahmon O. Saka and those who are at the Lord's bosom Prof. S.O. Otokiti and Prof. Ade Oyedijo. Thank you.

No matter how far I go, some persons in my life cannot be forgotten in a hurry. Most importantly, I would like to thank Prof. Stephen & Ambassador (Dr.) Regina Ocheni for their support and assistance. Last but not the least, I would like to acknowledge the emotional support and contribution of my secondary school classmates and childhood friends: Ugbede Nelson Attah (ACS), Navy Commander Edward Iyaji, Sunday Obiora, Williams Ameh, Barr. Ugbede Abalaka, Barr. Edoebo Ameh, Augustine Obaje, Rev. Frs. Wilson, Cornelius, Jude, as well as Anthony and Francis, and every other member of SKOBA 97 set. You were all instrumental to the success of this project from beginning to end. I honestly, lack words to communicate the measure and magnitude of my appreciation. I am indeed really grateful, and indebted to each and every one of you, including those not mentioned due to the constrain of space. Thank you very much.

Ngiyabonga! Dankie! Enkosi! Ke a leboha!

## **DEDICATION**

### **TO GOD ALMIGHTY**

The provider, giver and taker of life.

### **TO MY LOVING FAMILY**

My Parents: Mr. Samuel Attah Egu (KSM) and Mrs. Catherine Egu (LSM)

My Siblings: Dorcas, Francis and Anthony

### **IN LOVING MEMORY**

Dr. Sipiwe Dhlamini,

*My co-supervisor whose sad event took place before the completion of this  
thesis.*

Rest well. God loves you more.

## ABSTRACT

This study's primary objective is to determine the impact that the JSE's AltX has on listed firm's performance and the level of entrepreneurship in South Africa. Its secondary objective was to quantitatively determine whether there exists a link between increased capitalisation of the AltX and the expansionary drive of listed firms, as well as to ascertain the impact that the listing requirements of the AltX has on the broad-based black economic empowerment (B-BBEE) score performance of listed firms. In order to achieve the methodological objectives of this study, mixed methods was used to measure this phenomenon which led to the development of an integrated model for the JSE's AltX listed firms, as well as for intending small and medium enterprises (SMEs) that might want to list. Accordingly, the researcher employed pragmatic research paradigm and conducted two types of analysis. Firstly, quantitative analysis which is based on primary and secondary data was conducted followed by a qualitative analysis based on a qualitative semi-structured case study. It was found that the JSE's AltX positively impacts on the performance of listed firms and the level of entrepreneurship in South Africa. Most especially as increased capitalisation levels was positively linked with the expansionary drive of these registered firms. And that the listing requirements of the AltX had a net positive effect on the B-BBEE score performance of these companies. Practically, by virtue of being listed many SMEs would generate enough capital and buzz to facilitate their expansion. This study also contributes to new knowledge by recommending that the JSE's AltX develop a custom-made business-friendly targeted listing procedure. Just as policy makers are encouraged to create a one-stop-shop investment portal which would streamline the activities of government agencies for the benefit of Small, Medium and Micro-Enterprises (SMMEs) in South Africa. The researcher proposes that future research would extend beyond South Africa, across the SADC, Africa or even across continents.

Besides, a 3-level multi-level modelling (MLM) equation testing procedure was conducted to test the efficacy of firm listing, using IBM SPSS Statistics version 27 statistical software package. Quantitative analysis, comprising: quantitative analysis of primary data from survey questionnaire (investigated whether location or sector impacts on firm performance), and quantitative analysis of secondary data (determined if the number of both SMMEs and the JSE's AltX listed companies impacts on firm performance and the level of entrepreneurship in South Africa). Using participants' sample from sixty JSE's AltX listed firms who were either CEOs/directors/top management team members, and ten interviewees (i.e. for the qualitative analysis, comprising: qualitative analysis of primary data from semi-structured case study), this study's triangulated findings and conclusions became more valid and reliable.

Evidence provided by the ensuing econometric analysis suggests that: Firstly, firms that are listed on the JSE's AltX were more likely to perform better than their unlisted peers (i.e. both formal and informal SMMEs). Thus, this helped listed firms to improve their company's performance, corporate profile, loan amount and profits, as well as assisted in securing a major investor for the firm. Besides, it was observed that the variation in the dataset occurred within sectors between the JSE's AltX variable parameters at Level 1. This positively impacted on the AltX market capitalisation, total number of employed personnel, foreign assets, as well as the total equity and liabilities of the JSE's AltX listed firms. Secondly, listing on the JSE's AltX was found to be positively associated with the level of entrepreneurship in South Africa. There was evidence that listing boosted the level of creativity and innovation in South Africa, as well as encouraged entrepreneurial risk taking, and also increased business confidence levels. Furthermore, it was observed that the variation in the dataset occurred within sectors between the JSE's AltX variable parameters at Level 1. Likewise, the turnover, AltX market capitalisation, the total investments and loans, as well as the earnings yield of the JSE's AltX listed firms were positively linked with the level of entrepreneurship in South Africa.

Thirdly, the rising share capitalisation of listed firms on the AltX was linked to an increased likelihood for company expansion. In addition, listing led to international firm exposure and industry position consolidation. However, the corporate bonds and equities sold by these listed firms on the AltX did not guaranty the long-term sustainability of their business. Also, it was observed that the variation in the dataset occurred within sectors between the JSE's AltX variable parameters at Level 1. Correspondingly, the qualitative case analysis indicated that listing on the AltX led to a high yield but with lower multiples, higher return on equity, joint ventures and acquisitions, share ownership dilution, debt reduction, more capital disbursement and risk diversification, and it also led to firm growth and economic development, which was good. Fourthly, higher compliance requirements for listing on the AltX, increased the likelihood that there would be improvements in quoted B-BBEE performance score. Equally, the implementation of good governance systems like the B-BBEE by listed firms made them more attractive to stakeholders. On the other hand, when the B-BBEE score of these listed firms becomes the regressand, listing had an undesirable effect on their value added, patents and trademarks in relation to company performance. This study therefore opens-up a new vista for examining the performance of listed firms in South Africa, which is a significant contribution to new knowledge.

**Key terms:**

Entrepreneurship, Small businesses, Johannesburg Stock Exchange, Alternative Exchange, Small and Medium Enterprises

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## LIST OF ABBREVIATIONS

OECD	Organisation for Economic Co-operation and Development
SMEs	Small and Medium Enterprises
JSE	Johannesburg Stock Exchange
AltX	Alternative Exchange
TEA	Total (early-stage) Entrepreneurial Activity
GEM	Global Entrepreneurship Monitor
B-BBEE	Broad Based Black Economic Empowerment
JVs	Joint Ventures
ED	Enterprise Development
SEDA	Small Enterprise Development Agency
DTI	Department of Trade and Industry
IPO	Initial Public Offering
TMT	Top Management Team
FSA's	Firm Specific Advantages
BFA	Bureau for Financial Analysis
RERC	Research Ethics Review Committee
ANC	African National Congress
MNCs	Multinational Companies
RBV	Resource Based View
CSA	Country Specific Advantage
NGO	Non-Governmental Organisation
SLL	Single Loop Learning
DLL	Double Loop Learning
TLL	Triple Loop Learning
SMART	Specific, Measurable, Achievable, Realistic and Timely
M&A	Mergers and Acquisitions
OL	Organisational Learning
IB	International Business
MBV	Market Based View
OLI	Ownership, Locational and Internalisation
R&D	Research and Development
IMF	International Monetary Fund
FDI	Foreign Direct Investment
4IR	Fourth Industrial Revolution (or Industry 4.0)
BREXIT	British Exit
COVID-19	Coronavirus Disease 2019
PEST-LE	Political, Economic, Social, Technological, Legal and Environmental
SWOT	Strength, Weaknesses, Opportunities and Threats
CE	Corporate Entrepreneurship
FE	Family Entrepreneurship
SE	Strategic Entrepreneurship
RE	Rural Entrepreneurship
FIELD	Fund for Innovation, Effectiveness, Learning and Dissemination
SE	Social Entrepreneurship
SEA	Social Entrepreneurship Activity
EEA	Employee Entrepreneurship Activity

ANC	African National Congress
ICT	Information and Communication and Technology
EFCs	Entrepreneurial Framework Conditions
APS	Adult Population Survey
NES	National Expert Survey
NPC	National Planning Commission
NDP	National Development Plan
DSBD	Department of Small Business Development
NSB	National Small Business
EU	European Union
UN	United Nations
SMME	Small, Medium and Micro-Enterprise
USA	United States of America
SMBs	Small and Medium Businesses
SEBRAE	Serviço Brasileiro de Apoio às Micro e Pequenas Empresas
OEM	Original Equipment Manufacturers
OBM	Original Brand Manufacturers
EMS	Electronics Manufacturing Service
CEM	Contract Electronics Manufacturers
ODM	Original Design Manufacturers
B2B	Business to business
RF	Radio Frequency
BEE	Black Economic Empowerment
LLC	Limited Liability Company
SEFA	Small Enterprise Finance Agency
CSAs	Country Specific Advantages
GCI	Global Competitive Index
SADC	Southern African Development Community
AfCFTA	African Continental Free Trade Area
CSR	Corporate Social Responsibility
MTSF	Medium Term Strategic Framework
GDP	Gross Domestic Product
TVET	Technical and Vocational Education Training Colleges
YBBSDP	Youth Black Business Supplier Development Programme
WBDS	Women Business Development Scheme
NAMAC	Ntsika Enterprise Promotion Agency, National Manufacturing Advisory Centre
CPPP	Community Public Private Partnership Programme
Stp	Seda Technology Programme
IDC	Industrial Development Corporation Limited
APSS	Agro-Processing Support Scheme
BIS	Black Industrialists Scheme
SEZ	Special Economic Zones
GBS	Global Business Services
IFD	Industrial Financing Division
BIP	Black Industrialists Programme
ECIC	Export Credit Insurance Corporation of South Africa
NEF	National Empowerment Fund
IDI	Inclusive Development Index



NCR	National Credit Regulator
CIPC	Companies and Intellectual Property Commission
CIPRO	Companies and Intellectual Property Registration Office
OCIPE	Office of Company and Intellectual Property Enforcement
SABS	South African Bureau of Standards
SANAS	South African National Accreditation Systems
NLA	National Laboratory Accreditation Service
DSI	Department of Science and Innovation
DST	Department of Science and Technology
IoT	Internet of Things
TIA	Technology Innovation Agency
NRF	National Research Foundation
NACI	National Advisory Council on Innovation
CSIR	Council for Scientific and Industrial Research
DHS	Department of Human Settlements
BNG	Breaking New Ground
HDA	Housing Development Agency
NHFC	National Housing Finance Corporation
RHLF	Rural Housing Loan Fund
SPAC	Special Purpose Acquisition Companies
TOT	Trade-off theory
POT	Pecking order theory
WACC	Weighted Average Cost of Capital
LSE	London Stock Exchange
AIM	Alternative Investment Market
OTCQX	Over-the-counter market
SEC	Securities and Exchange Commission
UK	United Kingdom
DA	Designated Adviser
DIP	Director Induction Programme
SENS	Stock Exchange News Service
SEM	Stock Exchange of Mauritius
NYSE	New York Stock Exchange
TSXV	Toronto Stock Exchange venture exchange
MC	Management Control
SD	Skills Development
ESD	Enterprise and Supplier Development
SED	Socio-Economic Development
EME	Exempted Micro Enterprises
QSE	Qualifying Small Enterprises
M&Ls	Medium to large enterprises
REIT	Real Estate Investment Trust
CSG	Contract Services Group
5G	Fifth Generation
PAT	Profit After Tax
ARV	Anti-Retroviral
AME	African Media Entertainment
PGE	Plastic Green Energy
MDAs	Ministries, Department and Agencies

FOs	Further offers
QUAN	Quantitative method
QUAL	Qualitative method
CFA	Confirmatory Factor Analysis
VIF	Variance Inflation Factor
AVE	Average Variance Extracted
rho_A	Spearman's rank correlation
MLM	Multi-level Modelling
SEM	Structural Equation Modelling
CB	Covariance Based
PLS	Partial Least Square
CFA	Confirmatory Factor Analysis
ROE	Return on Equity,
ROCE	Return on Capital Employed
BLUP	Best Linear Unbiased Predictions
ICC	Intraclass Correlation Coefficient
PLUM	Polytomous Universal Model
ML	Maximum Likelihood
LR	Likelihood Ratio
VPC	Variance Partition Coefficients
ANNs	Artificial Neural Networks
PE	Price Earnings
CMO	Chief Marketing Officer
REPO	Repurchase agreement, transactions and buy/sell-backs
SDGs	Sustainable Development Goals
WTO	World Trade Organisation

## CHAPTER 1: OVERVIEW

### 1.1 INTRODUCTION

Studies conducted by Shapiro (2009), McCann (2010), Baker and Kiyamaz (2013), Rodrigue, Comtois and Slack (2013), Mobarek and Mollah (2016), Miranda (2017), Hautcoeur, Rezaee and Riva (2018), as well as Pesendorfer (2020) suggests that the evolution and integration of financial markets in recent decades have fundamentally created and increased competition among stock exchanges. To the extent that almost all stock exchanges now behave like standard firms, seek revenue, as well as profit, have shareholders, exhibit a global orientation strategy and uphold the value of being socially responsible through vibrant community engagements (JSE, 2019; 2020). Furthermore, there are some fundamental gaps in South Africa's macroeconomic structure which was created by past racial prejudices that deserves readjustment (Endeavor, 2010; UNDP, 2014; Odusola, Cornia, Bhorat and Conceição, 2017). According to the Organisation for Economic Co-operation and Development - OECD (2015) domestic barriers to firms entering markets are still high, while the impact of declining revenues that is inversely linked with the rising wage bill has created a narrow tax base that continue to dwindle government subsidies in various sectors of the economy. Contemporaneously, there is a dire need to incessantly fill the void in capital finance for small and medium enterprises (SMEs) whose metamorphosis from sole proprietorships to partnerships and then to listed corporations relies on the availability of funding to attract the requisite expertise and resources that is necessary to drive their growth.

Unsurprisingly, these changing global and local macroeconomic dynamics stirred the Johannesburg Stock Exchange (JSE) to set up an alternative exchange (AltX) in 2003 to accommodate good quality, small- and medium-sized high growth companies that can help grow the economy (JSE, 2020). The World Economic Forum (2016a: 2) asserts that new alternative capital sources have significant effects on both the capital supply side and the capital demand side. Thus, it creates disruptions that will reinvigorate the marketplace and accelerate the growth of small businesses. Expectedly, this will eventually pave way for unhindered economic participation in post-apartheid South Africa especially among black disadvantaged communities. Hence, capital resources inter alia, can be efficiently allocated between competing investment opportunities, and will also lead to the growth of SMEs, *ceteris paribus*.

Due to the paucity of data and research on the JSE's AltX, and the inconsistencies in the findings of prior research studies about the impact of the lower bourse on listed firm's operations, there exist a huge gap in the body of knowledge pertaining to the contribution of the JSE's AltX on firm performance and the level of entrepreneurship in South Africa (Egu, Chiloane-Tsoka and

Dhlamini, 2016; 2017; Mmako, 2021). The aim of this study therefore was to ascertain whether listing on the JSE's AltX contributes to registered firm's performance and the level of entrepreneurship in South Africa. This research thus contributes to our understanding of the effects of this phenomenon on listed SMEs' operations in the country. More so, the findings of this research can be used by industry practitioners to develop a more robust business operations model, while policy makers can use it to create a viable business ecosystem in South Africa. Furthermore, this study employed pragmatism research philosophy which led to the use of a mix research approach to test the validity and reliability of the research hypothesis of this study. The quantitative data for this research was solicited from a survey questionnaire and a secondary dataset, while the qualitative case study for this research was elicited from a semi-structured interview protocol. The triangulation of data was also carried out, in order to derive a rich, thick and in-depth description of this phenomenon, and also to arrive at a valid and reliable conclusion in this research.

Intriguingly, the findings of this study revealed that not only was the impact of firm listing on the JSE's AltX linked with improved performance, its positive effect on entrepreneurship levels in South Africa, share capitalisation levels and the broad-based black economic empowerment (B-BBEE) score rating of listed companies was identified to be vital for the growth of local companies. Similarly, the net job creating capability of these registered firms was also observed to be associated with their positive performance. Just as, listing increased the level of media publicity and raised the corporate profile of listed firms both locally and internationally, and also led to increased foreign assets, as well as raised the total equity and liabilities of the JSE's AltX listed firms (JSE, 2020). Besides, firm listing on the AltX led to a high yield but with lower multiples, higher returns on equity, joint ventures (JVs) and acquisitions, reduced share price, led to share ownership dilution, debt reduction, more capital disbursement and risk diversification, and also led to firm growth and economic development, which was good. On the other hand, the value added and patents and trademarks were found to be negatively linked with the performance of registered firms on the lower bourse when the B-BBEE score of listed firms becomes the regressand, due to the effects of preferential procurements when these firms comply with the B-BBEE requirements. The study therefore opens a new avenue for examining the performance of listed firms in South Africa.

This thesis contains seven chapters. Chapter 1 contains the background study, research setting, the research problems, questions, objectives, hypotheses and the research method to be employed in the study. Chapter 2 reviewed relevant literature on the concept, types and nature of entrepreneurship in relation to SME business activities. Chapter 3 provides a concise overview of the small

business development environment in South Africa, as well, it enumerated the factors that contributes to the success of SMEs in the country. Chapter 4 contains the central literature review for this study. It provides a critical synopsis of the JSE's AltX based on the theoretical background and the motivation of the study. It also led to a contextual justification which culminated in the formulation of the research hypothesis for this study, which led to the development of a suitable theoretical model and operationalised conceptual framework for this study. Chapter 5 discusses the research design of the study. Quantitative methods were utilised to gather primary data using a survey questionnaire that gathered data from 60 JSE's AltX listed firm's CEOs/directors/top management team (TMT) members. While the secondary data was elicited from relevant database sources. Also, qualitative methods were employed in the study via a semi-structured interview protocol that gathered information from 10 JSE's AltX listed firm's CEOs/directors/TMT members. Furthermore, Chapter 6 disclosed the empirical research analysis, results and findings. Lastly, Chapter 7 contained the discussions, conclusions and recommendations of the study.

The remainder of the chapter details the problem statement, purpose of the study, research questions, research objectives, research hypothesis, research methodology, assumptions of the study, limitations of the study, as well as the justification and the contribution of the study. The next section presents the background of the study.

## **1.2 BACKGROUND OF THE STUDY**

Many international comparative analyses of various countries have shown that South Africa is rated high globally in the ease of doing business index, indicating the effect of sound macroeconomic fundamentals in areas that deals with business regulation, starting a business and the protection of property rights (South Africa Info, 2013abc; Herrington, Kew and Kew, 2014; OECD, 2015; World Economic Forum, 2016b; Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019). South Africa was ranked as the 60<sup>th</sup> most competitive country out of 141 surveyed in the 2019 World Economic Forum's Global Competitiveness Index (GCI) Report, making it the second highest ranked country in Africa (World Economic Forum, 2019). However, despite this success, the nation struggles with persistent high levels of unemployment (in particular youth unemployment), low levels of economic growth, as well as low levels of total (early-stage) entrepreneurial activity (TEA) index (Herrington and Kelly, 2012; Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019).

Cotis (2007) posits justifiably that there is growing scientific evidence that entrepreneurial activities matter for employment, productivity and ultimately,

economic growth. As such, SME policies have been given greater visibility, because it provides a key source of dynamism, innovation and flexibility for most net job creating schemes (OECD, 2005; EIM Business & Policy Research, 2011; Jasra, Khan, Hunjra, Rehman and Azam, 2011; European Commission, 2012; Frank, Ewuim and Asoya, 2012; Department for Business Innovation & Skills, 2013; Herrington and Kew, 2018; UNCTAD, 2019).

Previous research on entrepreneurship such as studies conducted by Drucker (2007), Levie and Autio (2007), Acs and Audretsch (2010), Burns (2010), Fayolle (2010), Buckley (2012), Herrington, Kew and Mwanga (2017), Herrington and Kew (2018), as well as Bosma and Kelley (2019) have centred on both the Global Entrepreneurship Monitor (GEM) and the Casson approach to entrepreneurial cultures in their various findings. However, entrepreneurial cultures alone provide weak evidence, and the claims that justify such conclusion needs to be reinforced with new evidence. This notion is plausibly supported throughout this study, as it has been found that both the business environment and the stock exchange transaction influence the levels of national entrepreneurship (Basu, Casson, Wadeson and Yeung, 2008; Acs and Virgill, 2010; Revia, 2013; Ács, 2015; Dana, Ratten and Honyenuga, 2018; World Bank, 2020). It can be claimed that inconsistent factors in various societies affect the level and success of entrepreneurial activity.

Globally, the GEM approach and proposition has been widely accepted, based on the assumption that a causal relationship exists between the level of entrepreneurial activity in an economy and the level of economic growth. However, this one-way model has been criticised (Levie and Autio, 2007), as well as the methodology applied by the GEM studies (Acs, 2010; Bergmann, Mueller and Schrette, 2014; Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019).

More so, the GEM studies analysis claims that opportunity entrepreneurship is a distinctive feature of advanced nations, while necessity entrepreneurship is a characteristic feature of emergent nations (GEM, 2013). However, critics have suggested that the distinction between opportunity and necessity entrepreneurship is too simplistic and untenable to be used to describe different entrepreneurial behaviours across different nations (Deakins and Freel, 2009; Giacomini, 2012; Valerio, Parton and Robb, 2014; Mazzucato, 2015; Herrington and Kew, 2018; Bosma and Kelley, 2019). This forms a point of departure for the study.

Furthermore, Casson (1990) observes that the analysis and classification of the entrepreneurial cultures of advanced or developed economies leads to a distinction between high-level entrepreneurial behaviour that is associated with

the Schumpeterian concept of entrepreneurship, and, low-level entrepreneurial behaviour, which he claimed to be associated with the Kirznerism concept of entrepreneurship. According to Jong and Marsili (2011) there is an antithetic characterisation of opportunities that has been propounded by both scholars, in order to disambiguate this phenomenon. In Schumpeter's view, the entrepreneur is a charismatic leader and an innovator that introduces new combinations of resources in an economic system in equilibrium, thus initiating a dynamic process of creative destruction. In Kirzner's view the entrepreneur is an arbitrageur whose creative alertness facilitates exchange and inspires him to spot opportunities for trade by acting as an intermediary between suppliers and customers, despite not owning resources due to imperfect knowledge, individual sub-optimality and costless marketplace information and, by doing so, through price adjustments, brings back the system into equilibrium (Egu, Chiloane-Tsoka and Dhlamini, 2016).

According to Deakins and Freel (2009) Casson's hierarchy of national entrepreneurial cultures was an attempt to provide objective measurements of subjective and intangible values of different national cultures. This trend leads to widely different interpretations. It becomes imperative to note that it would indeed be a fundamental mistake to view certain economies as model or prototypical entrepreneurial economies.

It has been observed by the Endeavor (2010) studies that the most competitive nations are those that have the highest level of entrepreneurial activity. The finding of this research reveals that small and medium sized businesses tend to be the greatest creators of jobs, and collectively aid the capital accumulation process by creating wealth that helps to alleviate poverty in emerging economies. Moreover, South Africa's Gini coefficient which is the national gap between the rich and the poor, is quite low at 65 per cent based on expenditure data and 69 per cent based on income data (Statistics South Africa, 2014: 13). This has driven the nations' policy makers, parastatals and researchers to probe into measures that stimulate entrepreneurship and critically encourage small business development, in order to promote the inclusion program of the popular government and reduce the inequality rate.

Furthermore, the legal developments in South Africa have created new compliance requirements for companies operating in the country. The B-BBEE Act that was enacted in 2007, as an amendment to the Black Economic Empowerment (BEE) Act of 2003, has resulted in the addition of codes such as the Enterprise Development (ED) code 600 with the main objective of supporting and growing emerging black owned businesses (EY, 2013). The ED code makes up 15 per cent of the overall B-BBEE scorecard and requires South

African corporates to spend 3 per cent of their annual profits (which is about R12 billion) as support for black owned enterprises (Endeavor, 2010).

Additionally, the Small Enterprise Development Agency (SEDA) has been mandated to operate business incubators in order to assist emerging companies survive and grow during highly volatile start-up period with logistic support from the Department of Trade and Industry - DTI (DTI, 2013). Apart from improving the survival rate of start-up companies, incubation also creates a synergistic environment. However, the one area where the SEDA is failing is in Initial Public Offering - IPO (Peters and Naicker, 2013).

According to Tsele (2016) the JSE is often seen as the exchange that exclusively serves large companies such as AB InBev, BHP Billiton and Anglo American. However, listing on the AltX has been used as a growth strategy by small and medium businesses as well. Evidence from the listing of Gold Brands Investments (which owns the popular Chesa Nyama franchise) reveals how effective the AltX<sup>1</sup> can be used to nurture small businesses, because within 2 months of listing and raising R25 million, the traditional flame-grilled meat franchise strategically expanded operations, in the process became one of the nations fastest growing brands with about 300 franchises across South Africa and employing over 3000 people. This seemingly important good news does not stop there, because the Chesa Nyama franchise has either extended or is planning to expand its tentacles into the following countries, namely, Botswana, Zimbabwe, Zambia, Namibia, Swaziland, Mozambique and the United States of America (USA) very soon (Gold Brands Investments, 2016; Thulo, 2016).

Also, this research pursues advancements in knowledge that serves as conduits for entrepreneurial development, since small businesses listed on the AltX unlock the creativity, as well as the innovative capacity of the nation, and also help to attain the government's policy objectives of dealing with the challenges of the under-representation of small/black owned businesses in the stock market.

According to Heerden (2015) the JSE Main Board (which is among the top 20 stock exchanges in the world) offers large established companies the opportunities to seek the next level growth that enables them to facilitate export opportunities, licensing, turnkey projects, franchising, joint ventures or wholly-owned subsidiaries operation in various locations. However, Hind and Steyn (2015) point out that the AltX provides listed firms the opportunities to use the

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<sup>1</sup> Due to the volatility of the exchange, this study's base year is 2016 - in order to compensate for the frequent listings, suspension, delisting and elevation of companies to the JSE's main board, as well as to accurately measure the impact of listing on SMEs over time.



capital raised to drive systemic growth and also increase their revenue. More so, the AltX regulatory compliance provisions lead to a direct positive influence on SME's organisational performance due to high-level corporate governance requirements. Thus, increased shareholder value aids the creation and sustenance of corporate competitiveness and innovation.

Although, all over the world stock exchanges have been widely studied because of their impact on economic growth (Adenuga, 2010; Boubakari and Jin, 2010; Nazir, Nawaz and Gilani 2010; Caporale and Spagnolo, 2011; Abdul-Khaliq, 2013; Masoud, 2013; Ishioro, 2013; Bayar, Kaya and Yildirim, 2014; Ghosh and Karmakar, 2014; Kim and Heshmati, 2014; Mobarek and Mollah, 2016; Miranda, 2017; Hautcoeur, Rezaee and Riva, 2018; Pesendorfer, 2020), little is known about the contribution of the AltX to listed firm's performance and entrepreneurship development in South Africa. Consequently, this trend has created a gap in the extant body of literature, and as a matter of high significance necessitates a thorough study concerning the impact of the JSE's AltX on listed firm's performance and entrepreneurship development levels in South Africa.

Prior studies carried out by Moolman (2004), Naidoo (2006), Gondo (2007), Theunissen (2012), Scholtz (2013), Kruger (2014), Shadung (2014), Mashaba (2014), Heerden (2015), Hind and Steyn (2015), Inyama and Ozouli (2015), Ungerer, Gerber and Volschenk (2015), Pelcher (2017), Makoko and Muzindutsi (2018) and Mmako (2021) have centred on the financial management, auditing, stock market asymmetry economic model, IPO performance, sustainability and corporate governance compliance of the JSE's AltX listed companies, this creates a gap in extant literature because the impact of the AltX on listed firm's performance and entrepreneurship have been understudied. This fundamental issue therefore forms an essential aspect of the main motivation for this study which is to determine the impact that the AltX has on listed firms' performance and entrepreneurship, hence provide an original and practical contribution to the body of knowledge in this field of study.

### **1.3 PROBLEM STATEMENT**

Understanding how to effectively raise capital in order to boost the performance of listed firms on the AltX has become a very critical topic to both academicians and practitioners in recent years due to the fact that the non-availability of capital is obviously the major constraint that inhibits the growth of SMEs in the country. Heerden (2015) posits that the AltX assists SMEs to raise capital, which can be used to finance their expansion and transformation into high growth firms.

According to the United Nations (2016) there is a growing disconnect between finance and real sector activities. Consequently, the main aim of creating the JSE's AltX was to remedy this gap, by assisting firms to raise capital, make acquisitions, improve business processes, and also distinguish them from their unlisted peers, and thus, inter alia, accelerate the process of sustainable national growth. Cheyne (2016) observed that the AltX have listed 120 companies thus far raising a total of R48.5bn, while 60 companies are currently listed on the AltX with a total market capitalisation of R32.6bn. However, the delisting of 24 per cent of the firms that have been registered on the lower bourse and the migration of 26 per cent of these listed firms to the main board motivates the researcher to probe the impact that listing on the JSE's AltX has on firm performance.

Apart from this problem being of current interest, it is also an area of future research. Many SMEs have failed in South Africa due to resource impoverishment and management incompetence, because these SMEs face significant disadvantages against larger and well-established businesses. The World Economic Forum (2016a) posits that alternative investments are the future<sup>2</sup> of capital for entrepreneurs and SMEs, since it will definitely impact on the share capital level, B-BBEE score performance and help boost the level of entrepreneurship in South Africa. According to Naidoo (2006) this sector has been identified to be performing sub-optimally. And that its contributions towards economic growth and development, significantly fall short of expectations. Small businesses therefore need to reconfigure their dynamic capabilities, as well as their strategic processes in order to enable them to efficiently and effectively utilise their resources.

Although a paucity of evidence is available to back up the underlying theory with empirical authentication that reinforces the literature in this field of study, the findings of some research studies have pointed out that the AltX provides listed firms a competitive edge over non-listed companies in South Africa (Ungerer, Gerber and Volschenk, 2015; Tsele, 2016, Mmako, 2021).

Numerous studies have empirically measured the positive impact of IPOs and share capital on the risk-based performance of companies that are listed on the JSE AltX, however, the major limitation of these previous studies can be traced

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<sup>2</sup> According to Fin24 (2015a) in order to meet the national development plan (NDP) target of creating 11 million jobs by 2030, South Africa needs over 49,000 SMEs growing at a rate of 20 per cent (per annum). While about 8.2 million small and micro-enterprises (SMMEs) is required to create an equivalent number of jobs. Increased funding will therefore lead to the creation of scalable SMEs that can effectively reduce the problem of high and persistent unemployment in South Africa.

to their use of only secondary data, which relied on market-based proxies (Kruger, 2014; Shadung, 2014; Mashaba, 2014; Heerden, 2015; Hind and Steyn, 2015; Inyama and Ozouli, 2015; Ungerer, Gerber and Volschenk, 2015; Pelcher, 2017; Makoko and Muzindutsi, 2018; Mmako, 2021). In addition, while IPOs and share capital price accurately reveals the market value of businesses, it does not explain in detail the impact that listing on the lower bourse has on firm performance and entrepreneurship (Mashaba, 2014; Harvey, 2016). Furthermore, none of these studies measured the relationship between firm listing on the AltX and business performance. It is against this backdrop that this study attempts to examine the impact that listing on the JSE's AltX has of firm performance and entrepreneurship levels in South Africa using a multi-level analysis that encompasses both primary and secondary data. By using this rational and pragmatic approach, the accuracy, reliability and validity of the findings of this study can be verified, relied upon and generalisable with broader applicability beyond this context. Otherwise, SMEs will not be able to ascertain the real benefits/drawbacks of listing on the AltX, as well as, establish its impact on entrepreneurship levels in the country.

Furthermore, despite the fact that several studies have focused specifically on the JSE and the AltX, there are limited research covering the key variables that can be used to ascertain the impact of listing on the key performance metrics of registered firms (Moolman, 2004; Naidoo, 2006; Gondo, 2007; Theunissen, 2012; Scholtz, 2013; Kruger, 2014; Shadung, 2014; Mashaba, 2014; Heerden, 2015; Hind and Steyn, 2015; Inyama and Ozouli, 2015; Ungerer, Gerber and Volschenk, 2015; Pelcher, 2017; Makoko and Muzindutsi, 2018; Mmako, 2021). Considering the aforementioned problems, the researcher decided to interrogate the gaps from previous studies by articulating study variables that adequately reveal the impact of firm listing on the JSE's AltX with particular reference to company performance and entrepreneurship levels in South Africa. Since most of the previous studies used only one methodology i.e. either quantitative or qualitative approach to tackle the gaps in the literature, the use of mixed methodology was envisaged by the researcher to ameliorate the problem of common [or one] method bias. According to Creswell and Creswell (2018) this methodological problem causes intercorrelations between variables to be either inflated or deflated, as well, together with other factors lead to inconsistencies in the finding of similar studies, which justifies the rationale for a mixed study.

Consequently, in this study the researcher had to conduct a secondary analysis to measure the impact of firm listing on important macroeconomic variables such as firm turnover, market capitalisation, patents and trademarks foreign assets, the number of SMEs in South Africa, the total (early-stage) entrepreneurial activity rate, goodwill, promotions to the Main Board, delistings

from the AltX, B-BBEE score performance, as well as its impact on key profitability ratios. To the best of the researcher's knowledge, this detailed form of analysis has not been carried out by prior studies. More so, due to the fact that the some of the past macroeconomic proxies used to measure the impact of listing on the JSE's AltX on firm performance and entrepreneurship levels in South Africa could not satisfactorily do so, the use of primary data to gather thick, rich and contextual information is inevitable. Apart from this reason, past research did not collect adequate biographical information like ethnic group, location, and the years of international experience of the executives of the JSE's AltX listed firms. Likewise, the researcher considered it also important to ascertain if media visibility, the attraction of skilled manpower, improved corporate governance standards boosted creativity and innovation levels, firm competitiveness, company expansion, sustainability, improved B-BBEE compliance score etcetera which was not covered in prior studies. Based on the enumerated problems, it became plausible to reinforce current literature studies in this area with sound empirical authentication given the inconsistencies in the findings of previous studies.

#### **1.4 THE PURPOSE OF THE STUDY**

In order to resolve the issues discussed in the problem statement of this study, the main purpose of this study is to carry out an investigation that will reveal the impact that the JSE's AltX has on the performance of listed firms, as well as determine the effect that this phenomenon has on the level of entrepreneurship in South Africa. The core elements of the purpose of this study comprise of the following: The conceptual identification of the operational processes of the JSE's AltX; The conceptualisation of the entrepreneurship theory and processes that capture and incorporate the idea that the AltX capital market financing contributes significantly to broader industry disruption; The quantitative and qualitative identification and description of the AltX listed firms using theory-based empirical research; The development of a model that elucidates a rational, specific and targeted approach for the companies that are listed on the AltX, as well as for intending SMEs that might want to join the lower bourse. Expectedly, this model will differentiate the performance of listed firms based on the impact that the AltX has on them over short-term, medium-term and long-term periods. By using this rational, specific and targeted approach to initiate and sustain the competencies of all the listed firms on the AltX, these companies will be further strengthened, and thus lead to the optimisation of their performance.

## **1.5 RESEARCH QUESTIONS**

The research question can be defined as a statement that identifies the phenomenon to be studied, which is the fundamental core of a thesis. It is a special tool of emphasis in a pragmatic study (Creswell, 2014; Creswell and Creswell, 2018). Also, the question a researcher asks determines the focus of the study, as well as the research methodology, and directs different phases of an inquiry, analysis, and the research outcome. The following research questions were formulated so that the purpose of this study can be achieved, which are as follows:

- (1) Does listing on the JSE's AltX impact on firm performance?
- (2) What is the relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa?
- (3) How does increased share capital levels influence the expansion and performance of listed firms on the AltX?
- (4) How does the compliance requirement of the AltX impact on the B-BBEE score performance of listed firms?

## **1.6 RESEARCH OBJECTIVES**

In order to resolve the pertinent issues that were raised by the research problem and questions of this study, and also, in order to achieve the main purpose of this research, the following research objectives were formulated, which are as follows:

### **1.6.1 PRIMARY OBJECTIVES**

- (1) To determine the impact that the JSE's AltX has on listed firm's performance.
- (2) To determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa.

### **1.6.2 SECONDARY OBJECTIVES**

- (1) To quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms.
- (2) To ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms.

### **1.6.3 METHODOLOGICAL OBJECTIVES**

- (1) To use both quantitative and qualitative approaches to ascertain the impact of firm listing on the JSE's AltX.
- (2) To develop an integrated model for the JSE's AltX listed firms, as well as for intending SMEs that might want to join the lower bourse.

## 1.7 RESEARCH HYPOTHESIS

The term hypothesis can be referred to as a proposed explanation made on the basis of limited phenomenal evidence (through factual observation of reality), as a starting point for further investigation in a research study, so that researchers can either disprove a theory or add supporting evidence to it. According to Le Roy (2012) a hypothesis is a testable statement of relationship (between a dependent and independent variable which might also include antecedent or intervening variables) that is derived from a theory. In order to achieve the objectives of this study, the following research hypotheses were designed and formulated below:

### *Hypothesis 1*

H<sub>01</sub>: Firms that are listed on the JSE's AltX are less likely to perform better than unlisted SMEs.

H<sub>a1</sub>: Firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs.

Based on past historical JSE's AltX financial data listed firms have been able to raise about R48.5 billion (Cheyne, 2016), however, various scholars have come up with conflicting findings about its impact (Heerden, 2015; Pelcher, 2017; Makoko and Muzindutsi, 2018; Mmako, 2021). The researcher decided to probe this phenomenon by encompassing previously ignored econometric indicators such as firm profitability, revenue, promotion to the Main Board and delistings from the AltX, corporate visibility and firm profile, as well as other profitability ratios in order to ascertain the impact that listing has on SMEs. Thus, as stated in hypothesis 1, the researcher decided to probe whether firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs. Furthermore, an elaborate background information about the formulation of hypothesis 1 is provided in Chapter 4 Section 4.8 (with more details provided in Section 4.8.4.1). Thereafter, the findings drawn from Hypothesis 1 was used to develop an integrated process model for this study in Chapter 7 Section 7.7 (as depicted in Figure 7.1) based on the reasons derived from both the quantitative and qualitative analysis carried out in Chapter 6 of this thesis.

### *Hypothesis 2*

H<sub>02</sub>: The unprecedented performance of the listed firms on the JSE's AltX is negatively associated with the level of entrepreneurship in South Africa.

H<sub>a2</sub>: The unprecedented performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa.

Extant research has linked stock market growth with increased level of entrepreneurship (PWC, 2019). Nevertheless, South Africa has a low TEA rate accompanied with a high unemployment rate (Herrington and Kew, 2018). Unsurprisingly, most of the country's business failure has been associated with the problem of lack of finance. Contemporary studies have highlighted this fact by pinpointing that listing provides small businesses with the capital to drive and expand their operations within and outside the country (Global Entrepreneurship Monitor, 2018). But this is devoid of empirical authentication. Given the knowledge gap in this area, this study sought to find out if listing really impacts on entrepreneurship levels in South Africa, by empirically testing its net impact on entrepreneurship, firm competitiveness, creativity and innovation, entrepreneurial risk taking, training of SME managers/owners etc. Consequently, for hypothesis 2 the researcher provided enormous detail concerning the formulation of this premise in Chapter 4 Section 4.8.4.2. Afterwards, the findings drawn from Hypothesis 2 was used to consolidate the recommended model for this study in Chapter 7 Section 7.7 (as shown in Figure 7.1), which is based on the reasons provided in both the quantitative and qualitative analysis carried out in Chapter 6 of this thesis.

### *Hypothesis 3*

H<sub>03</sub>: The rising share capitalisation of the listed firms on the AltX decreases the likelihood of these companies' expansion.

H<sub>a3</sub>: The rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion.

Contemporary entrepreneurial finance literature reveals that using expensive sources of funding like bank loans can lead to firms accumulating a huge debt burden over time. According to Herrington and Kew (2018) 27 per cent of businesses in South Africa had to close their businesses due to the problem of lack of access to finance. Given that registering on the AltX assists SMEs to raise cheap funds, the JSE's AltX is therefore an integral part of the entrepreneurial ecosystem in South Africa. Available data from the JSE (2020) shows that 34 companies have migrated to the JSE main board out of 128 new listings on the AltX. However, 37 companies have been delisted from the AltX so far, representing about 28.9 per cent of total firm listings. This is way below the SME failure rate of 75 per cent in South Africa (Burger, 2016). Given the complexity of this situation, the researcher decided to find out if increased share capital levels impacts either positively or negatively on listed firms' performance, due to the absence of empirical studies in this area. Furthermore, the researcher provided intricate details about the formulation of hypothesis 3 in Chapter 4 Section 4.8.4.3. Subsequently, the findings drawn from Hypothesis 3 was used to develop an integrated process model for this study in Chapter 7 Section 7.7 (as depicted in Figure 7.1), based on the observations from both the quantitative and qualitative analysis carried out in Chapter 6 of this thesis.

#### *Hypothesis 4*

H<sub>04</sub>: The higher the compliance requirements for listing on the AltX, the less likely that there would be improvement in quoted firms B-BBEE performance score.

H<sub>a4</sub>: The higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score.

The ghost of South Africa's apartheid past continues to reverberate across the financial ecosystem in the country (Black Management Forum, 2012). There is little business participation by blacks, especially when it comes to business ownership and employment. Consequently, in line with the existing B-BBEE legislation (B-BBEE Amendment Act, 2013), the JSE's compliance requirements/guidelines have been modified to cater for the new legislations in this area for sustainability/profitability's sake. Nevertheless, the findings of recent studies are inconsistent, because the impact of the JSE's AltX B-BBEE compliance requirements does not always translate to higher scores for listed firms (Mzilikazi, 2015; Akinsomi, Kola, Ndlovu and Motloun, 2016; Mehta and Ward, 2017; Mokgobinyane, 2017; Pike, Puchert, and Chinyamurindi, 2018; Mmako, 2021). Although, the researcher assumes that higher B-BBEE scores would definitely lead to better performance, limited data is raising concerns about the validity and the reliability of the findings of prior studies. It is therefore important to empirically test if the compliance requirement of the JSE's AltX actually impacts on the B-BBEE score performance of listed firms. So, for hypothesis 4 the researcher provided enormous detail concerning the formulation of this premise in Chapter 4 Section 4.8.4.4. Next, the findings drawn from Hypothesis 4 was used to develop the recommended model for this study in Chapter 7 Section 7.7 (as shown in Figure 7.1), which is based on the reasons provided in both the quantitative and qualitative analysis carried out in Chapter 6 of this thesis. Interestingly, Hypothesis 4 was split into two in Chapter 6, with Hypothesis 4A being the same as stated above, while Hypothesis 4B tested the impact of the B-BBEE score performance of the JSE's AltX listed firms on their overall business performance. This ensured that the researcher effectively measured the impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms, as well as measure the impact of their B-BBEE performance on the aggregate business performance thereafter.

## **1.8 RESEARCH METHODOLOGY**

In order to validate the research hypotheses for this study, the research methodology section describes the research approach, paradigms, and processes, as well as elucidates the reason why the chosen approach was adopted (Chapter 5). Creswell (2014) points out that the research design process consists of three approaches, which can be either qualitative, quantitative, and mixed methods approach. The combination of both the



quantitative and qualitative (i.e. mixed) research methodology in this study enhanced, and also explained in greater depth/detail the underlying phenomenon and mechanisms that were used in this research. Firstly, the quantitative part of this study was adopted because it focused on the measurement of objective and statistically valid information that can only be primarily sought from an appropriate sample and/or an existing numerical data (Johnson and Christensen, 2014; Bolt, 2015; Trochim, Donnelly and Arora, 2015; Creswell and Creswell, 2018). While, secondly, the qualitative part of this study was carried out via interviews with selected CEOs/directors/TMT members of the JSE's AltX listed firms from where the conclusions of this study were derived. Furthermore, the adoption of this method accurately generated an outcome that can be used to adequately measure the impact that the JSE's AltX has on listed firms' performance and entrepreneurship levels in South Africa. Available evidence reveals that many SMEs do not know how to measure their performance, because the transition from sole proprietorship to incorporation takes time and personnel effort to achieve and determine set company targets. The adoption of this research methodology therefore assists company executives to be aware of the enormous potential that listing on the AltX has on their performance, since these SMEs can easily use share financing to expand their operation.

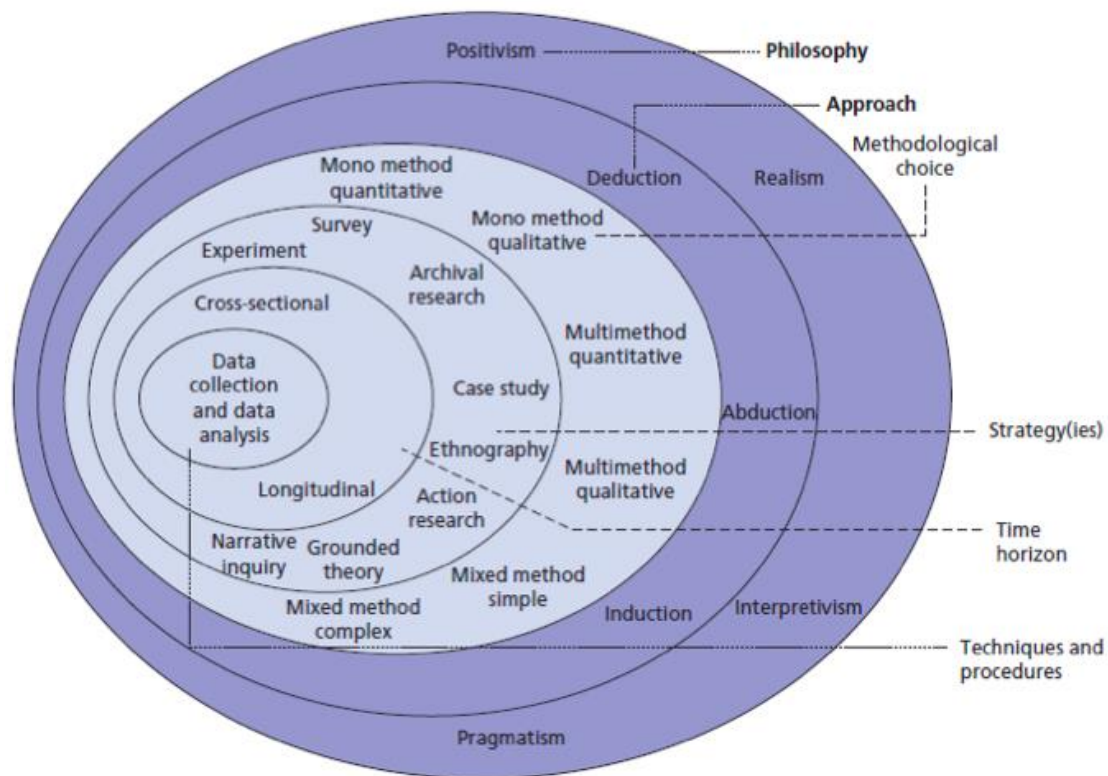
Also, by combining both primary and secondary data in this study, the accuracy and validity of the research results was further strengthened, because the use of unique respondents' information, as well as established data from verifiable sources helped to overcome the weaknesses and biases of each form of data, and also assisted in investigating this phenomenon thoroughly (Klette, 2012; Johnson and Christensen, 2014; Lisch, 2014; Trochim, Donnelly and Arora, 2015; Oflazoglu, 2017). The preceding sections will discuss in detail the research philosophy, paradigm, design, ethical considerations, delineation, validity and reliability that is used in this study.

### **1.8.1 RESEARCH PHILOSOPHY**

The research philosophy is a reflexive process that deals with the belief concerning the way that data about a particular phenomenon should be gathered, analysed and used (Saunders, Lewis, and Thornhill, 2016). According to Bajpai (2011) the research philosophy reveals the source, nature and the developmental process of new knowledge. This constellation of knowledge is depicted in Figure 1.1. In this study, the assumptions about the JSE's AltX were operationalised in Chapter 4, 5 and 6 of the study.

Generally, there are four main branches of the research philosophy in which all social scientists must affiliate with, such as pragmatism, positivism, realism, and interpretivism (Creswell, 2014; Creswell and Creswell, 2018).

Consequently, the justification for the choice of the research philosophy can be impacted by practical implications that have to do with both the ontological and epistemological perspectives of a researcher, the preferred research method, the time horizon of the study, the techniques and procedures that the researcher uses, as well as the type of data to be collected and the tools that are available for data analysis (Johnson and Christensen, 2014).



**Figure 1.1: Research philosophy in the ‘research onion’ (Source: Saunders et al., 2016)**

Creswell (2014) posits that the scientific method in quantitative research entails an objective confirmatory test of hypothesis and theory with data, while in qualitative research the researcher uses a subjective exploratory approach to generate and construct knowledge, hypotheses, and grounded theory from data that is collected during fieldwork. However, some researchers who are interested in tapping the positive aspect of both quantitative and qualitative research might adopt mixed research methods. This study therefore adopts the pragmatism research philosophy, since it relies on actual theoretical and empirical facts and evidence (Mertens, 2010). The research question therefore turns out to be the key determinant factor that necessitates the adoption of this viewpoint. Thus, practical outcomes were considered important in this research, because it enhanced both the reliability and validity of the study.

The choice of the pragmatism research philosophy for this study can be traced to the focus on facts and numbers, which makes this study to be both quantitative and qualitative in nature. The researcher's intention was to find out if the JSE's AltX really impacts on the performance of listed firms and entrepreneurship level in South Africa. Therefore, the study needed to rely on objective and measurable ontological aspects, as well as an epistemological justification through empirical confirmation of hypotheses that are numerical, predictable and also provide a casual explanation of this phenomenon, in order to inform national policy (Bajpai, 2011). In addition, the focus of this study necessitated the need for a narrow-angle lens, so that specific hypothesis can be accurately tested. Moreover, the nature of phenomena under investigation entailed that the collection of quantitative/qualitative data would precisely measure and validate the findings of this study, as well as identify statistically valid relationships between the research variables (Creswell, 2014).

Similar studies such as Shadung (2014) that studied the impact of an economic recession on the working capital management of SMEs in South Africa, and Heerden (2015) which studied the AltX in order to find out if it was doing what it is supposed to do (i.e. encourage the listing of high growth SME's). And Mmako (2021) that studied the role of the JSE AltX as a platform for sustainability and growth for high growth potential SMEs, as well as Mashaba (2014) that studied the IPO performance of companies listed on the JSE alternative exchange, used quantitative research methodology in order to achieve their research objectives. However, the latest developments in the practice of conducting studies in this area have increased the popularity of the pragmatism research method, given the fact that there exist inconsistencies in the findings of past research about the JSE's AltX (Creswell, 2014; Saunders et al., 2016).



**Figure 1.2: The Research Philosophy process (Source: Thompson, 2004)**

From the above diagram, the idea of this research emanates from the researchers' interest in entrepreneurial debates and observation of facts or events that was triggered by the work of researchers and subject matter experts. This experience of the researcher thereafter leads to a reflection process. But since reflection has to do with the capacity to exercise

introspection and the willingness to learn more about the fundamental nature, purpose and essence of any endeavour, it invariably led to an inquiry and observations that is intended to modify the current body of knowledge in this area of study. This process therefore encompasses critical thinking, which can be defined as a clear, reasoned thinking involving critique. Without applying deep thought researchers might come out with a misconstrued perspective of the reality, which have caused the inconclusive nature of research in this area.

Furthermore, the theorisation process was used to develop the body of knowledge for this study (Global Entrepreneurship Monitor, 2007; Bosma and Kelley, 2019). Likewise, the JSE's AltX data was thereafter diligently linked with entrepreneurial theories using either a contemplative and rational type of abstract or generalisable thinking or constructs, or the results of such thinking, ultimately, leading to a pragmatic discussion on this area of study. Thus, the function of thought acts as an instrument or tool for prediction, action, and problem solving, which therefore leads to realistic solutions that are primarily based on practical considerations, rather than ideological notions.

Consequently, this process led to experimentation, which forms the bases of this study's hypotheses. In addition, it also resulted in the carrying out of an orderly procedure with the main goal of verifying, refuting, or establishing the validity of each of the study hypothesis, as well as provide insights into the cause-and-effect relationships of this study's variables, by demonstrating what outcome occurs when a particular factor is manipulated (which relies on repeatable procedures and logical analysis of the results). Brush (2014) identifies experimentation as one of the core principles of an enterprise, because it is this process that generates new innovation, initiatives, ideas, and opportunities that leads to various discoveries, as well as the improvement and creation of new goods and services.

Lastly, the adoption of the pragmatism research philosophy led to an intellectual proposition (i.e. the thesis). More so, during this process various notions of prior studies were also used to form an antithesis, which comprises both negations and reactions to opposing propositions. In the end, according to Cooper, Hedges and Valentine (2009) the study *synthesisation process* (i.e. the triangulation of data) was used to solve and resolve various intellectual conflicts in this study area, and thereafter, the researcher was able to put forward incisive recommendations for further studies.

### **1.8.2 RESEARCH PARADIGM**

For a thesis to be acknowledged by the academe and industry experts to be valid, reliable and justifiable, researchers need to categorically state their

research paradigms, indicating the ontological, epistemological and methodological positions that was adopted in the research. This stance forms a basis of evaluation of the author's appraisal of perception and categorisation in relation to other scholarly works, as well as their view pattern in the subsequent interpretation of research data or responses, and even their behaviour, attitudes and value propositions in the research process.

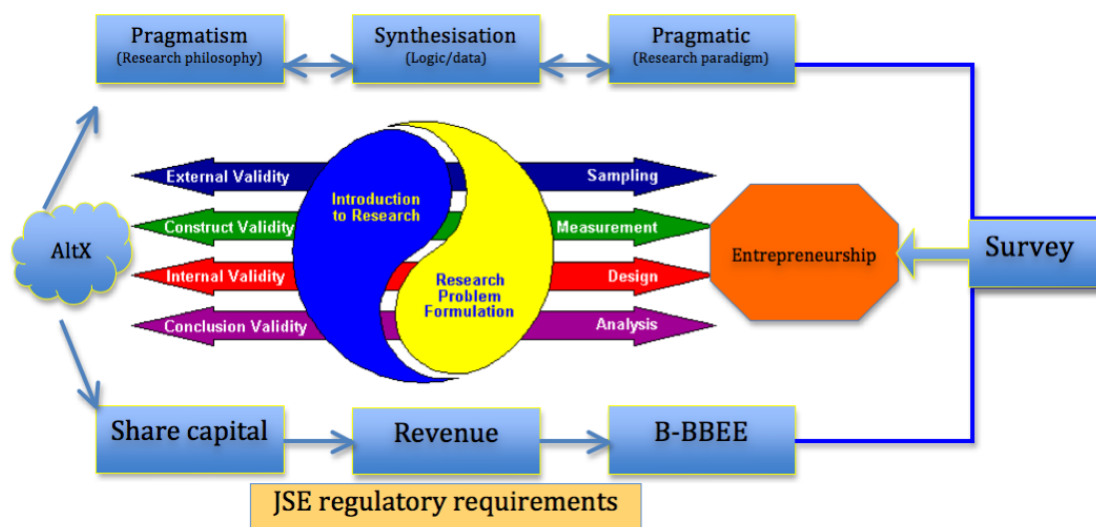
Research paradigms guide how researchers make decisions and carry out research. It is fundamentally the structure upon which research and development in any field of inquiry is based. A paradigm thus is simply a belief system (or theory) that guides the way we do things, or more formally establishes a set of practices. This can range from thought patterns to action. According to Saunders et al. (2016) the positivism research paradigm states that there is an ontological notion of a single reality or truth, which can be measured using quantitative experimental and survey research. However, the interpretivism research paradigm assert that there is no single reality or truth, hence, reality needs to be interpreted using qualitative ethnography grounded theory, phenomenological research, heuristic inquiry, action research, discourse analysis, and feminist standpoint research (Kasi, 2009; Creswell, 2014; Creswell and Creswell, 2018).

In contrast, the realism research paradigm concentrates on the reality and belief system that are in existence, which can either be a direct realism (since an individual can see, hear and feel) or critical realism (when individuals argue about their experiences constructively) (Sekaran and Bougie 2010). Lastly, the pragmatism research paradigm affirms that in ontological perspectives, *reality is constantly changing*, thus the epistemological notion that works must provide solutions to problems using either or a combination of the other research paradigms that best fits the current study (Johnson and Christensen, 2014). Powell (2001: 884) points out that: “*to a pragmatist, the mandate of science is not to find truth or reality, the existence of which are perpetually in dispute, but to facilitate human problem-solving*”. This paradigm therefore solves the problem that deals with the fundamental lack of practicality and impact of educational research in the entrepreneurship literature.

This study uses the pragmatism research paradigm, which is a universally recognised abduction methodology to provide solutions to the research problem and questions. The research paradigm thus employs interventions, interactions, and their effect in multiple contexts throughout this research inquiry. In addition, the quantitative/qualitative research approach that was adopted by this study relied mainly on the collection of quantitative/quantitative data to derive valid conclusions for this study (Creswell, 2014; Johnson and Christensen, 2014; Creswell and Creswell, 2018). Similar studies carried out

by Naidoo (2006), Theunissen (2012), Mashaba (2014), Heerden (2015) and Mmako (2021) on the AltX used only the quantitative research approach to arrive at their conclusions. Although, secondary information was elicited from the JSE’s AltX database, in order to enhance the validity and reliability of this study, primary data was also collected from 60 AltX listed company’s CEOs/directors/TMT members who are experienced and possess valuable information/knowledge about the phenomenon that is being studied via questionnaires. While, primary qualitative data was elicited from 10 AltX listed company’s CEOs/directors/TMT members using a semi-structured interview protocol, so as to reinforce the findings from the quantitative analysis.

Undoubtedly, the pragmatic paradigm assumes that there is a connection between thought and action. Although, this methodology is very reliable and unbiased, unlike other paradigms, which are not compatible in its intent, and unconsciously omits significant concepts that in the process confuses the reader, pragmatism ensures that the problem statement and the research questions determine which research data collection and analysis methods will be used throughout a research. Most times, it uses either qualitative or quantitative methods or combines both at the same time.



**Figure 1.3: The Yin and Yang Map of the Study (Source: Trochim et al, 2015)**

The diagram above (i.e. Figure 1.3) illustrates the Yin and Yang map of the study. It indicates that this study uses the pragmatism research philosophy that relies on the pragmatic paradigm to disaggregate the study variables, so that the researcher can attain a valid and reliable conclusion. Besides, this study used the synthesis of logic and data to arrive at its conclusions. Furthermore, this abductive reasoning was implemented and assessed according to the strict principles of validity, while ensuring the systematic use of symbolic and mathematical techniques to determine the forms of valid

deductive argument (as exemplified by the hypotheses presented in this study). Likewise, survey and interview techniques were used to capture data on the impact that the JSE's AltX has on listed firm's performance and entrepreneurship levels in South Africa, taking cognisance of the various perspectives of the CEOs/directors/TMT members that were sampled.

Above and beyond, the yin-yang figure in the centre links this study to the theoretical literature of the AltX research on the left and to the practical issue of how to articulate entrepreneurship research projects on the right. According to Trochim (2006) the four-arrow links on the left describe the four types of validity in this research. Moreover, in this study, the idea of validity provides the researcher with a unifying theory for understanding the criteria for good research. While, the four-arrow links on the right point to the research practice areas that correspond with each validity type in this study (Trochim, 2006; Cohen, Manion, and Morrison, 2011; Martella, Nelson, Morgan and Marchand-Martella, 2013; Bandalos, 2018; Baldwin, 2019).

In addition, the use of a pragmatic paradigm in this study assumes that finding a permanent external validity is not practicable, since reality is constantly changing. Therefore, the external validity of this study is based on answering the research questions taking cognisance of the research data and the outcome of the empirical/qualitative analyses. While, its corresponding practice area, which is sampling methodology concerns how this study drew representative samples (e.g. people; population, organisations; as well as the sampling frame) so that generalisations that were arrived at was possible, plausible and unambiguous (Lisch, 2014). Many researchers have postulated that the corresponding result of a good research measurement leads to construct validity (Rossiter, 2011). This refers to the degree to which inferences can legitimately be made from the operationalisation constructs in the study to the theoretical constructs on which those operationalisations are based upon (Rossiter, 2011; Martella, Nelson, Morgan and Marchand-Martella, 2013; Trochim, Donnelly and Arora, 2015; Bandalos, 2018; Baldwin, 2019).

Besides, it has been well documented in statistical literature by Creswell (2014) that the research design provides the glue that holds the entire research project together, in order to address the central research questions. This item relates to the corresponding outcome in Figure 1.3, which is the internal validity of the study. It is defined as the approximate truth about inferences regarding cause-effect or causal relationships (Johnson and Christensen, 2014; Trochim, Donnelly and Arora, 2015). Thus, internal validity is only relevant in studies that try to establish a causal relationship. In this study, statistical tests were carried out to ensure the internal validity of this research. However, the analysis section of this study involved a detailed process of defining the research problem; developing and implementing a sampling plan; conceptualising,

operationalising and testing all the relevant research measures; and also developing and executing a valid and reliable mix research design structure for this thesis (Trochim, 2006; Rossiter, 2011; Martella, Nelson, Morgan and Marchand-Martella, 2013; Oflazoglu, 2017; Bandalos, 2018; Baldwin, 2019). Finally, the corresponding outcome which is the conclusion validity, explained if there was a relationship between various macroeconomic variables in this study's variable observations. And as the most important outcome of this research process also determined if the various relationships identified during the statistical data analysis were reasonable, and could sufficiently draw a valid inference on the entire research population, which was as expected (Creswell, 2014; Creswell and Creswell, 2018).

### **1.8.3 RESEARCH DESIGN**

Research design according to Creswell (2014) works as a systematic plan outlining the study, the researchers' methods of compilation, as well as details how the study will arrive at its conclusions, and also specifies the limitations of the research. Furthermore, it refers to how a researcher puts a research study together to answer the research questions. Having adequately perused the research problem, objectives, questions and hypotheses, this research employed both quantitative and qualitative research methods, in order to arrive at generalisable conclusions, because the AltX data, as well as listed firms' datasets could only be derived from such accurate and fact reinforcing sources. Despite the fact that quantitative study is an important data gathering methodology in social science research, the use of qualitative methodology enabled researchers to gather non-numerical (i.e. hard) data (Given, 2008; Berg and Lune, 2012; Babbie, 2014; Oflazoglu, 2017; Bandalos, 2018; Creswell and Creswell, 2018). This was absolutely important given this study's intention of searching for an in-depth understanding of the impact that the JSE's AltX has on firm performance and entrepreneurship levels in South Africa. Whilst quantitative methods utilise the use of mathematical evidence to either justify or reject a study's hypothesis, qualitative methods are an indispensable aspect of contemporary research probing, since it assisted the researcher in making informed assertions that was difficult to arrive at on the basis of 'pure scientific' statistical theory (Alasuutari, 2010; Pernecky, 2016; Creswell and Creswell, 2018).

As earlier stated, this study employed the pragmatism research paradigm that entails the use of a mixed research methodology. However, this research relied mostly on quantitative research techniques i.e. deduction because it was confirmatory, and could also test the study's hypotheses and theory with available statistical data. That said, the use of only one research method was not sufficient in this context, since each method can reinforce the findings from



the other. Hence data triangulation enhanced the trustworthiness, credibility, dependability, conformability, transferability, authenticity, validity as well as the reliability of this study. Consequently, the findings of this research yielded an unbiased result/findings/conclusion that are generalisable across similar populations and to other related phenomena (Johnson and Christensen, 2014; Baldwin, 2019).

Furthermore, the ontological disposition of this study (i.e. nature of reality/truth) provided a basis for objectivism, and agreed-upon structural proposition for the study to be carried out successfully (Saunders et al., 2016). Moreover, the study's epistemological foundation (i.e. theory of knowledge) provided sound evidence of scientific realism that necessitated the search for truth, which was based upon justification by empirical confirmation of hypotheses using universal scientific measurement standards (Creswell, 2014; Creswell and Creswell, 2018; Baldwin, 2019). Since the research objective can be empirically tested via the study hypotheses, this research used quantitative/numerical description, as well as casual explanation (that were qualitative in nature), and prediction to arrive at its conclusion. In addition, the variable composition for this study, yielded substantial evidence that led to both valid and reliable conclusions, and, also, identified statistical relationships (i.e. correlation and causation) among variables that impacted on listed SME's performance. Besides, the analysis of this study's hypotheses bares that the impact that the JSE's AltX have on listed firm's performance and entrepreneurship levels in South Africa were robust, revealed a greater detail, rigour and depth with unbiased nuanced perspectives, findings and conclusions.

#### **1.8.4 POPULATION OF THE STUDY**

According to Banerjee and Chaudhury (2010) a research population is a complete set of people with a specialised set of characteristics from which valid inferences can be made in a study. However, in practice it is not possible to survey the whole population. Since this study adopted the pragmatic research paradigm, the researcher decided to choose both the target population and the accessible population of this study based on the research questions. Hence, the target population of this study comprised of all the 60 firms that are listed on the AltX (as at December 2016) – which is made up of the CEOs of the JSE's AltX listed companies, their directors, TMT and staff, as well as their designated advisors and other stakeholders. While, the accessible population of this study includes all the CEOs/directors/TMT members of the JSE's AltX listed companies - due to the considerable amount of knowledge and experience that they have in this area. Furthermore, these JSE's AltX listed firm's CEOs/directors/TMT members were selected because they were in charge of the day-to-day management and operation of these firms, as their

main risk takers and decision makers. Also, they were selected because they possess most of the attributes/knowledge that entrepreneurs have that are intrinsic and constitute the firm specific advantages (FSAs) that makes listed firms to compete favourably in the market. This oversight knowledge was considered important because the central focus of this study is to ascertain the impact of JSE's AltX listing on firm performance and entrepreneurship levels in South Africa. Moreover, this population sample was selected because listed firm's CEOs/directors/TMT members could easily access the company fact sheet from their headquarters, and were also able to clearly state the direction of the company, number of staff, revenue potentials and detail the expansion plans of these firms without the need for the bureaucratic requirement of authorisation.

Correspondingly, 10 selected JSE's AltX CEOs were sampled for interview due to their relative work experience and competence in divulging vital respondent information in the qualitative section of this study. Furthermore, a survey instrument cover letter was sent to the 60 JSE's AltX listed company CEOs/directors/TMT members that were selected to participate in this study, while an interview request letter was sent to the selected 10 JSE's AltX CEOs to be interviewed. Later on, depending on their choice, the researcher arranged with the participants to either email, fill-up an online form or deliver the survey questionnaire to their offices to fill up. While, those to be interviewed were required to choose a convenient venue and time to participate in a semi-structured interview thereafter. Consequently, as indicated earlier, the primary data for this study was collected from questionnaires and through a semi-structured interview protocol, while the secondary data for this study was elicited from the JSE's AltX listed firm's annual statements, as well as from other relevant database sources.

### **1.8.5 SAMPLING METHOD**

In statistics literature, sampling can be defined as the selection procedure employed in the selection of a subset of variables from the inferential statistical population in order to estimate the characteristics of the entire population (Kalton, 2009; Johnson and Christensen, 2014; Creswell and Creswell, 2018). The adoption of both quantitative and qualitative research techniques in this study indicates that this research utilised both primary and/or secondary sources of data (Klette, 2012). The primary data for this study was generated from information that were elicited from the field survey (i.e. the questionnaires) and semi-structured interviews. In order to achieve a valid inference from the population – given the idiosyncrasies of this study, quota sampling and judgemental sampling was employed throughout this research. This is because it is based on the researcher's judgement regarding the most common or typical

characteristics of the population under investigation (Creswell, 2014; Baldwin, 2019).

Furthermore, Creswell (2014) rightly identifies quota sampling as a non-probabilistic sampling technique that divides the survey population into relevant stratification such as mutually exclusive subgroups based on practicalities and intricacies that are determined and selected by the researcher with respect to certain known (i.e. non-random) characteristics, qualities or interests. Consistent with similar research, the Explorable (2016) posits that quota sampling is a non-probability sampling technique wherein the sample subgroup has equal proportions of observations as the entire population taking cognisance of the known characteristics, traits or focused phenomenon, as well as the research paradigm and philosophy used in a research study. According to Yin (2014) the most significant advantage of this sampling technique over other types is that the grounds for drawing generalisations (for example, in the proposition of new theory and policy) from studies that are based on this non probability sampling method can be linked with the notion of theoretical saturation and analytical generalisations, instead of researchers' basing their closing arguments on statistical generalisations. This conforms with the ideas of the pragmatic research paradigm that was employed throughout this study.

Consequently, this study used quota sampling to select the 60 JSE's AltX listed company's CEOs/directors/TMT members due to the great interest of this mutually exclusive subgroup to the study as mentioned earlier. Although about 120 firms have listed on the JSE's AltX most of them have either stopped operation due to either failure, liquidation, bankruptcy, mergers and acquisitions and/or promotion to the Main Board of the JSE. This necessitated the choice of 60 listed company's CEOs/directors/TMT members to participate in the quantitative survey (i.e. the questionnaire) part of this study. Likewise, consistent with qualitative literature, 10 JSE's AltX CEOs/directors/TMT members were selected to participate in a semi-structured interview from the sample population. More so, the concept of saturation influenced the choice of these 10 interviewees from different sectors of the economy. This sample size was justified by the findings of Guest, Bunce and Johnson (2006) and Morgan, Fischhoff, Bostrom and Atman (2002) where the concept of data saturation is identified to influence the number of new themes and concepts that a study can reveal during data analysis. From their analysis, between 10-12 interviews identified 80-92 per cent of new concepts before saturation, after which saturation causes incoming data to produce little or no new information. Hence, this study's interview sample conforms with the well-accepted standard for sample sizes for qualitative inquiry. Besides, the population of 60 JSE's AltX listed firm's CEOs//directors/TMT members were estimated at 95 per cent confidence level and 0.30 error term to yield a sample size of 10 interviews for

this study. Thereby, reinforcing the findings of earlier studies on the best sample size for this kind of study.

### **1.8.6 DATA COLLECTION**

Due to the paucity of information concerning the activities of listed firms on the JSE's AltX, this study combined both primary and secondary data. According to Yin (2014) no single source of data has a complete advantage over all others, as such the validity of a scientific study increases when various sources of evidence are consolidated together. In the same vein, Lakew (2015) observed that different sources are highly complementary, and a good scientific inquiry should use as many sources as possible. The primary data for this study was elicited from a survey questionnaire, which was distributed by the researcher to respondents, as well as via a semi-structured interview protocol. While, the secondary data was retrieved from various relevant databases that will be discussed in Chapter 5.

#### **1.8.6.1 SECONDARY DATA**

Secondary data is an important component of research that is related to the collection and processing of data by people other than the researcher (Creswell and Creswell, 2018). According to Boslaugh (2007) secondary data has the obvious benefit of being already existing information that has been gathered and it covers a wider field. The secondary data for this research was generated from the JSE, McGregor BFA, GEM Global Report and other relevant sources. This data was elicited in order to validate and confirm the reliability of the investigation (i.e. the survey questionnaire and semi-structured interview). Furthermore, the secondary data collected was used to answer the research questions, and also empirically test the research hypothesis that deals with the impact that listing on the JSE's AltX has on firm performance, market capitalisation, B-BBEE score/compliance requirements and the level of entrepreneurship in South Africa.

Since this study utilises a mixed methodology approach, it was absolutely necessary that there are enough data points to estimate a valid and reliable econometric model (Baldwin, 2019). More so, the employment of secondary data served as a tool for data triangulation (i.e. via rigorous and thorough analysis), which was a solid base to arrive at and reinforce the findings, conclusions and recommendations at the end of this research. In addition, vital financial data and information about the JSE's AltX listed companies was retrieved from the annual reports of these firms. The researcher used the dataset on revenue, profit, tax, B-BBEE score and the share capital of these companies to measure their performance. Besides, the data that was initially

collected spanned over a 13-year timeframe i.e. from 2003 when the JSE's AltX came into operation to 2016, which is this study's investigation period. However, the dataset was also extended to 2019, in order to cater for statistical software validity requirements via automatic data and logarithm transformations. As a matter of fact, and practicability, data capturing was restricted to this period because the researcher relied on publicly available information from the inception of the JSE's AltX. Also, since all the listed companies on the lower bourse used the same accounting method in their annual reports, the collected data was anticipated to be uniform and reliable. Despite the fact that this dataset is freely available data from the JSE's AltX, business intelligence information was accessed from Sharedata.co.za web portal and the INET BFA IRESS database.

### **1.8.6.2 QUESTIONNAIRE DESIGN**

In order to collect the primary study information for this study, a survey instrument (i.e. the questionnaire) was designed for onward distribution to all the selected JSE's AltX listed company CEOs/directors/TMT members. The questionnaires contained Likert scale closed format questions that asked participants to provide a response along a continuum of possible responses as follows: strongly disagree; disagree; undecided; agree; strongly agree. Moreover, in order to ensure this study's sensitivity, the Likert scale was used because it has many items, as opposed to the use of a single-question scale which limits the distributional range of responses and the measurement data that would be collected. According to Bajpai (2011) the computation of correlation between the items in the Likert scale, makes it possible for the researcher to easily capture more information and comfortably administer the questionnaire, so that a summated analysis can be carried out. Similarly, the questions asked in this study's questionnaire followed the format that was specified in Lakew's (2015) study.

Besides, the questions in the instrument were pre-tested to eliminate ambiguity and problems with wordings. Also, the completed questionnaire data was checked for validity and reliability. Likewise, the IBM SPSS Statistics version 27 statistical software was used to analyse the generated responses/data. Next, frequency tables and cross tabulation was employed during the statistical analysis phase of this research, in order to achieve an analytical conclusion. Thereafter, regression tests were carried out, so as to establish the relationship between the dependent variable and independent variables, as indicated in the hypothesis development phase of this study (in Chapter 4 and 5).

In addition, the use of the questionnaire survey instrument in this study is consistent with the research methodology of similar studies. According to Adèr,

Mellenbergh, and Hand (2008) researchers rarely survey the entire population for two reasons: the cost is too high, and the population is dynamic. For the purpose of gathering the quantitative primary data for this study, the CEOs/directors/TMT members of the JSE's AltX listed firms were selected as respondents because they possess the requisite managerial experience and knowledge to give fair and precise responses to the questions that are contained in the questionnaire. Due to time constraints, finance, and other related logistics that may hinder the survey of the entire population size, this research was confined to the selected study population. After the ethics review application for the research was approved, mailed invitation for survey were sent to selected participants, which eventually lead to question assessment appointments either online, in-person, by post or via email.

### **1.8.6.3 INTERVIEW PROTOCOL DESIGN**

This study used an interview protocol to collect qualitative data from 10 selected JSE's AltX listed CEOs/directors/TMT members. More so, the interviewees were selected due to their experience, knowledge and competence in divulging vital participant information - based on their business sector and the size of their company. Furthermore, the interview was scheduled to take approximately 15 minutes of the participant's time. While the interview format utilised a semi-structured design to interrogate respondents. This implied that the interview questions that were specified could be asked in no particular order. Likewise, the interview was audio taped in order to ensure that all participant's comments were captured and transcribed appropriately, except the interviewee objects to it. Consistent with similar studies, before the interviewee answers the interview questions, the following pre-interview procedures were adhered to: Firstly, the interviewee first of all had to fill in the interview participant information sheet in advance. Afterwards, the interviewer would sign the confidentiality agreement. Later on, the interviewee was asked to sign the research participant consent form, if he/she agrees to be interviewed without objection. Then lastly, the participant would then be asked questions as contained in the semi-structured interview protocol (i.e. in no particular order).

Given that the semi-structured interview protocol is designed to gather subjective data to complement the quantitative part of this research, the interview questions were designed in a manner that ensured the trustworthiness and/or authenticity of this study. This is premised on a detailed approach using case study methodology. And also acted as a safeguard guaranteeing the credibility, dependability, conformability, transferability, as well as the authenticity of this research. Moreover, the interview comprised two separate items namely, Part 1 - i.e. the general information questions, and Part 2 - i.e. the questions that deals on issues concerning the JSE's AltX impact on

listed firm's performance and entrepreneurship levels in South Africa. Besides, measures were taken by the researcher to secure the confidentiality of the participant's responses. Consequently, all comments and responses were treated as confidential information, and any audio taped data collected as part of this project was stored securely in accordance/compliance with the University of South Africa's management of research data policy. Also, the interview audio tape recordings were transcribed and stored in a secure place, but would be discarded on completion of this study.

#### **1.8.6.4 PILOT STUDY**

The pilot (i.e. survey questionnaire) study for this study was distributed to 10 respondents (i.e. approximately 20 per cent of the survey sample) that have similar profiles to the target population. The selected respondents had existing businesses that were located in Johannesburg, South Africa. This is consistent with similar studies. That said, the pilot study participants consisted of only SME owners/managers that were very knowledgeable about the phenomenon that is being studied. One semi-structured interview pilot study was also conducted. Likewise, the results of the pilot study was analysed using the IBM SPSS Statistics version 27 statistical package to ensure that the required validity and reliability parameters are met for this study. Besides, any wording problems in the questionnaire were either simplified or eliminated when detected during the pilot phase of this study. Also, the assessment time of the questionnaire/interview protocol was measured to ensure that it takes approximately 15 minutes for participants time to complete it. This saved the researcher time and cost, and also improved the chances of a clear outcome, since any noticeable design flaw was corrected before the actual questionnaire/interview protocol administration – i.e. before forwarding them to all respondents/participants.

#### **1.8.7 STATISTICAL ANALYSIS**

This study used a multi-level (mixed) model equation to generalise linear models in the data analysis section of this study (Chapter 6). Hence, linear regressions at more than one level were conducted, in order to ensure that the influence of varying sectors and location were accurately captured in the final results of this study. Multilevel models recognise the existence of data hierarchies. And, also ensured that correct inferences estimating group effects with the effects of group-level predictors was implemented in this study. According to Albright and Marinova (2010) this can be achieved with the tremendous agility of statistical software packages such as the IBM SPSS Statistics 27, as well as the sufficient computing power of desktop machines. More so, the Likert scale was coded as follows strongly disagree as 1, disagree

as 2, undecided as 3, agree as 4, and strongly agree as 5. In addition, the log transformation forms of some of the secondary variable data was carried out during the statistical analysis stage of this study, so that minute changes can be accurately measured.

Apart from the application of multi-level modelling equation in the data analysis phase of this study, validity and reliability tests were also carried out, so as to ensure that the findings and conclusions of this research were generalisable across similar studies. Later on, a rational, specific and targeted hypothetical model was developed at the end of this study (i.e. Chapter 7), as a guide for listed JSE's AltX firms and companies intending to register on the lower bourse. In the end, the researcher was able to achieve both the objectives of the study and also answer the research questions that were enumerated earlier in this chapter, as well as contributed to new knowledge in this field of study.

### **1.8.8 ETHICAL CONSIDERATIONS**

The researcher adhered to stringent ethical considerations while undertaking this research. An application for ethical clearance approval was requested from the departmental Research Ethics Review Committee (RERC) upon the approval of the research proposal of this study. As a part of the procedures for the survey questionnaire administration and the interview protocol dissemination, the researcher requested permission from the selected JSE's AltX company's CEO/director/TMT member in order to indicate their intention (i.e. whether positive or negative) before participating in the study. Since human subjects form part of this study, a special care for protecting human subjects who participate in the study was adhered to, as such the researcher applied principles of respect during engagement with participants (Creswell, 2014; Johnson and Christensen, 2014; UNISA, 2014; Yin, 2014; Creswell and Creswell, 2018). Similarly, based on the anticipated degree of risk, this research was classified as a low risk study, consequently, the only foreseeable risk that confronted the participants was instances of very minor discomfort or inconvenience which are mostly time related. However, both the survey questionnaire and the interview protocol would take approximately 15 minutes to complete. This compares favourably with studies of this magnitude. More so, a brief, purpose and objectives of the study was explained in the invitation letter soliciting their volunteerism and participation in the study. This allowed the participants to make informed decisions i.e. whether or not to partake in the study.

Furthermore, the privacy and confidentiality of participants was protected throughout this research. Correspondingly, respondent's anonymity was guaranteed and their identity and responses were treated with utmost confidentiality. Also, the researcher coded every participant's response with



alphabets (e.g. Aaa), that way identifiers were completely eliminated, more so, non-ethical questions like which political party or race does the participant support was avoided. Likewise, the transcriber, data statistician, language and technical editors were required to sign confidentiality agreements too. In addition, the researcher also agreed to send the completed thesis to any participant who is interested in knowing about the findings of this study, on request. Lastly, participants were selected based on the mutual exclusivity of the subgroup, which comprised of the JSE's AltX listed firm's CEOs/directors/TMT members who are easily accessible and can impartially give information about the phenomenon that is being studied. In order to avoid non-response and groups of people being left out or sampled unfairly due to either over-coverage or under-coverage during the questionnaire/interview protocol dissemination phase of this study, quota sampling was used to determine the sample frame (Johnson and Christensen, 2014; Yin, 2014:78).

Mouton (2003:238) rightfully describes the ethics of science to comprise of the right and wrong conduct in undertaking a research study. Furthermore, he stated that inappropriate practice in research involves describing the research problem to suit hidden agendas, compromising the research design, wary misapplication of statistics, fabricating information, misinterpreting results to protect a corporate point of view, and hiding of information. The researcher strove for and adhered to the highest ethical standards while conducting this research, so those concerns did not apply in this study (Creswell, 2014; Johnson and Christensen, 2014; Yin, 2014; Creswell and Creswell, 2018). Likewise, inapposite issues were avoided throughout this study. Lastly, the researcher adhered to ethical conduct in reporting findings of the research. Also important is the fact that the researcher avoided any form of biasness, as emphasised by Yin (2014:76) by maintaining neutrality throughout the entire research process.

#### **1.8.9 SCOPE AND DEMARCATION OF THE STUDY**

The analyses of research data can be considered reliable, when the study area is properly delimited and/or delineated. Consequently, this study had a limited scope, given the large size of South Africa. Apart from the secondary data, which was derived from the JSE's AltX, the survey area was restricted to the locations where the JSE's AltX listed companies operate, in order to create a smaller and suitable study area, given the time limit for this project and the resources that are available to undertake this research. Thus, this study only considered 60 JSE's AltX listed firm's CEOs/directors/TMT members as survey participants, while 10 JSE's AltX listed firm's CEOs/directors/TMT members were interviewed in this study.

### 1.8.10 VALIDITY AND RELIABILITY

Validity can be defined as the ability of a statistical instrument to measure what it is designed to measure. In this study, the research questions were transformed into a testable research hypothesis, operationalised and empirically measured using a multi-level modelling equation. Besides, the researcher had to selectively measure the various types of validity and reliability, in terms of content (face) validity and/or criterion validity and/or construct validity which could be either convergent or discriminant in nature (Creswell, 2014). Given that reliability is primarily concerned with the tendency of a measurement construct to repeatedly confirm that transient and situational factors do not impede the testing of a phenomenon. In this study, it was considered imperative that there was a continuous confirmation of the consistency of the measures used over time (Bajpai, 2011; Yin, 2014).

Composite reliability (i.e. internal consistency) testing ensured that the factor loadings estimate of all items/constructs were above the recommended threshold. In addition, the discriminant validity that was estimated confirmed that all the scales used in this research measured theoretically different constructs. Thus, in order to improve the internal consistency of these scales and to make them reliable for use in the study, all the items that did not meet the stipulated Cronbach's alpha cut-off point were dropped (Mahmoud, 2011). Unsurprisingly, the Cronbach Alpha for all the constructs used in this study hovered between 0.9 - 0.8, which is above the cut-off of 0.7 that was recommended from previous studies (Nunnally, 1978, Blankson and Stoke, 2002; Blankson and Cheng, 2005; Lance, Butts and Michels, 2006). Hence, this indicated that all the constructs had a high level of internal consistency. Likewise, the test of convergent validity, which is a standardised measure of composite reliability disclosed that all the variable constructs score were above the permitted limit of 0.7. While, the average variance extracted test exceeded the 0.5 threshold, indicating a high adequacy amongst all the variables. This implied that all the factors described more than half of the variance of their corresponding indicators resulting in both convergent and divergent validity. In the end, the resultant dataset ensured that the outcome of the study was test-retest reliable and valid (Creswell, 2014; Creswell and Creswell, 2018).

Equally, questions asked in the questionnaire enabled the researcher to statistically substantiate the validity of the information contained in the quantitative numerical (i.e. secondary) data. Similarly, the use of both primary and secondary data in this study ensured that data triangulation was possible and employed during the cross-verification of all the information and outcomes that emanated from the empirical and qualitative analysis. Consequently, this

compensated for inadequacies in a one-source data. And as expected, the final results accurately measured and reliably answered the research questions of the study (Mahmoud, 2011; Creswell, 2014). Besides, this ensured that exogenous factors which extant research suggests exert an influence (which might be negative) on hypothetical propositions did not invalidate the conclusion of this study (Maitland and Sammartino, 2015; Smale, Bjorkman, Ehrnrooth, John, Makela and Sumelius, 2015).

### **1.9 ASSUMPTIONS OF THE STUDY**

The underlying assumption in this study is that reality is objective, and the research process uses deduction to link empirical measurements with theory, which eventually led to generalisations. However, the use of abduction, intersubjectivity, and transferability was negligible throughout this research, especially in the qualitative (i.e. interview) section of this study. This is because it is important that the values of the researcher did not interfere with the research process, so that it can be possible to accurately analyse, predict, explain, understand and proffer valid recommendations about the phenomenon under study.

### **1.10 LIMITATION OF THE STUDY**

This study focuses on the impact that the JSE's AltX have on listed firm's performance and entrepreneurship. One of the major limitations of this kind of study is the research methodology. Although positivism approach was widely used throughout this pragmatic study, its disproportionate reliance on quantitative research methodology offers a broader landscape statistical analysis that requires more concomitant resource requirements. This is because this arduous research procedure reduces the bias of statistical data and uses the strengths of quantitative methodologies to provide a broader perspective of the overall issue (Creswell, 2014; Creswell and Creswell, 2018). However, it should be noted that this methodology is very complex (especially when it concerns data management, processing and analysis) and it is also, very costly to implement. Nevertheless, as a mitigating measure, the triangulation of paradigm data, guarantees the validity and reliability of this study (Klette, 2012).

Also, regardless of the use of pragmatism research philosophy, the pragmatic approach, as well as the utilisation of a mixed method complex methodology, and the implementation of the survey/case study strategies, the geo-spatial orientation of entrepreneurship across the country might lead to varying responses/data interpretations. Even the use of cross-sectional data, empiricism and rigorous techniques, as well as procedures for data collection

and analysis had its own merits and demerits. Hence, there is a tendency that the ensuing results might not align with each other. Besides, different provinces, municipalities and regions in South Africa, have different motivating factors that drive entrepreneurship and small business development (GEM, 2013). This might distort the findings of this research, because a vast majority of listed companies operate in neighbourhoods that are located close to the Gauteng province of South Africa. For instance, opportunity driven entrepreneurship thrives in advanced municipalities, while necessity driven entrepreneurship thrives in mostly poor remote township areas (Endeavor, 2010). Nonetheless, due to the triangulation of both primary (i.e. survey questionnaire/interview protocol) and secondary sources of data in this study, this research arrived at both valid and reliable conclusion.

### **1.11 JUSTIFICATION AND CONTRIBUTION OF THE STUDY**

Arising from concerns about the low level of employment and prevalent poverty rates in South Africa (Endeavor, 2010; EY, 2013; Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019), it was decided by the researcher to probe the reasons why most South African entrepreneurs and small businesses have not been able to invest substantially in the country, since they presently contribute about 40% of the nation's gross domestic product - GDP (Smulders, 2006). This compelled the researcher to study the impact of the JSE's AltX on listed firm's performance and entrepreneurship. Although so many agencies of government appear to be pursuing a broad-based small business agenda, many obstacles have continued to pose serious challenges to companies that are presently operating in the country. Expectedly, the findings of this study was used to develop a rationale model that catered for the needs of both listed firms and those that intend to list on the JSE's AltX.

It has been observed that both the conceptual and sectoral study of entrepreneurship and small business development is still in its relative infancy in South Africa. Despite the success of South African multinational companies (MNCs), there appears to be a major weakness in attracting small businesses to sustainably embark on large-scale operations in the country (Endeavor, 2010; DTI, 2013; GEM, 2013; Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019). A few studies that focus on these challenges reveal that the regulatory practice in the country, particularly with respect to the wanton imposition of taxes, and high risk levels in relation to the returns of these businesses is responsible for low investment levels (World Economic Forum, 2013; UNCTAD, 2019; World Economic Forum, 2019).

The main contribution of this study is that it provided answers to the research questions, by determining that the JSE's AltX positively impacted on listed firm's performance and the level of entrepreneurship in South Africa. Furthermore, it quantitatively showed that increased share capitalisation of AltX listed firms was directly linked to company expansion. Also, the JSE's AltX compliance requirements was found to be positively related to the B-BBEE score performance of listed firms. However, the B-BBEE score rating of the JSE's AltX listed firms had a negative impact on value added, as well as patents and trademarks. This was linked to the preferential procurement pre-qualification for compliant companies. Lastly, this research provided an original and practical contribution to the body of knowledge that is presently non-existent in this area of study. Thus, by providing a critical understanding of this phenomenon, many enterprising firms, as well as policy makers can make informed business decisions that would accelerate firm sustainability, as well as promote national economic growth and development.

## 1.12 DEFINITION OF KEY TERMS

**Alternative Exchange:** The JSE (2020) describes the Alternative Exchange (AltX) as the lower bourse of the Johannesburg Stock Exchange - JSE (founded in 2003) that is designed to provide listed firms with access to capital, and also provide investors with the opportunity to gain exposure to high growth small and medium companies. According to Cheyne (2016) the AltX is a public equity stock exchange that accommodates good quality, small- and medium-sized high growth companies. That said, the AltX was established to cater for the needs of start-ups, buy-outs and buy-ins, junior mining companies, family-owned entities and BEE companies. In this study, the AltX is referred to as the exchange that assists young high growth firms to raise capital and expand their operations both locally and internationally.

**Broad-Based Black Economic Empowerment:** As stipulated in the Broad-Based Black Economic Empowerment (B-BBEE) Amendment Act, No. 46 of 2013, the B-BBEE is a transformational initiative of the South African Government aimed at promoting economic transformation in order to enable the participation of black people in the economy. According to Pike, Puchert and Chinyamurindi (2018) the B-BBEE is a wholistic government intervention policy to promote economic participation and advance economic transformation among erstwhile racially discriminated groups in South Africa, in order to readdress the inequalities caused by the apartheid policy of white minority government. In this study, the B-BBEE represents programmes geared towards Black people in South Africa which comprises of Africans, Coloured and Indian people to engage in the development of various sectors of the economy with respect to their participation via ownership, management control, employment equity, skills development, preferential procurement, enterprise and socio-economic development. Based on the aforementioned points, in this study, the B-BBEE programme implementation is expected to create increased employment for disadvantaged communities, ensure equitable distribution of

income and opportunity, and economically unite the nation through equal access to services.

**Enterprise Development Code 600:** According to EY (2013) the Enterprise Development (ED) Code 600 as specified in the B-BBEE Codes of Good Practice 2014 is the code that sets measurement standards for firms so as to support and grow emerging black owned businesses in South Africa. More so, this code was formulated in order to check the non-inclusive structure of the Apartheid regime. Furthermore, the ED Code 600 can be defined as the generic enterprise development scorecard that was added to the B-BBEE Codes of Good Practice 2014 to measure the B-BBEE score performance of South African firms. In addition, the ED Code 600 is made up of 7 measurable scorecard elements that comprises of Ownership, Management Control, Employment Equity, Skills Development, Preferential Procurement, Enterprise and Supplier Development and Socio-Economic Development (B-BBEE Codes of Good Practice, 2014). Going further, the code stipulates that any qualifying small enterprise (QSE) with annual total revenue of between R10 million and R50 million qualifies as a QSE, if its qualification does not result from circumvention of the codes. This therefore implies that some companies in South Africa can apply for exemptions due to size considerations. In this study, ED Code 600 represents the qualifying contributions made by a measured entity that is listed on the JSE's AltX. The main aim for the implementation of this code is to readdress the drift in the socioeconomic status of South African citizens based on the mobility of labour and neighbourhoods or abode, so as to reduce inequality, eliminate poverty and link divided communities with a goal to unite all South Africans.

**Entrepreneurship:** According to Curran and Stallworth (1989) entrepreneurship is the conception of a new economic entity that makes ingenious products or services, which differs considerably from products or services offered elsewhere. This process leads to a creative destructive process that enables innovative firms to replace inefficient ones over time (Casson, 2010). In this study, entrepreneurship can be defined as the reiterative process of designing, inventing, launching, implementing, expanding and running a business, which typically begins as a small business. Obviously, entrepreneurship empowers firms to develop new ways to solve problems and create value in an economically disruptive manner.

**Impact:** The OxfordLanguages (2022) dictionary defines the word "impact" as a marked effect or influence, while the Collins English Dictionary (2022) defines it as a sudden and powerful effect. Based on the experience of the researcher, in this study, the term "impact" can be defined as the marked effect of a phenomenon on other econometric variables, which is the core foundation of a new idea, concept, technology, or ideology.

**Johannesburg Stock Exchange:** According to the JSE (2020) the Johannesburg Stock Exchange was established in 1887 and is South Africa's only full-service securities exchange, that connects buyers and sellers to a variety of different financial markets, namely equities, equity derivatives,

commodity derivatives and interest rate instruments. Furthermore, the JSE is currently ranked as the 19<sup>th</sup> largest stock exchange in the world by market capitalisation, but it is indeed the largest exchange on the African continent (Cheyne, 2016). Having been founded 135 years ago during the first gold rush in South Africa, Africa's premier exchange is the most liquid and the best regulated exchange on the continent. Thus, it hosts some of the largest companies on the continent.

**Small and Medium Enterprise:** The National Small Business (NSB) Amendment Act (29 of 2004) defines a small [business] enterprise organisation as any entity, whether or not incorporated or registered under any law, [which consists] consisting mainly of persons carrying on small [business] enterprise concerns in any economic sector [, or which has been] established for the purpose of promoting the interests of or representing small [business] enterprise concerns, and includes any federation consisting wholly or partly of such association, and [also] any branch of such organisation. Similarly, the Banking Association South Africa (2017) defines a small business based on standard industrial classification by sector, and could be relatively known as medium, small, very small, micro, and survivalist firms employing between 5-200 employees with a total turnover of between 200 thousand rand and 64 million rand, with a total gross asset value of between 100 thousand rand to 23 million rand. The NSB (102 of 1996) Amendment Act (26 of 2003) therefore gives a more comprehensive definition of SMEs based on five categories, namely, standard industrial sector and subsector classification, size of class, equivalent of paid employees, turnover and asset value – excluding fixed property.

### 1.13 ORIENTATION OF THE STUDY

This study is made up seven (7) chapters which are as follows:

#### Chapter 1: Introduction

This chapter contains the background study, the research problem, the objectives of the study and the research method that was applied in this study. The research proposal, with some minor reworkings, served as a basis for this chapter.

#### Chapter 2: The concept of entrepreneurship

In chapter 2 the concept of entrepreneurship was discussed in detail taking cognisance of its relationship with SME business activities. Furthermore, the type and nature of entrepreneurship was also disaggregated in this chapter.

#### Chapter 3: An overview of the small business development environment

This chapter provided a general review of the small business environment in South Africa detailing the factors that makes SMEs to be successful. Also, the strengths, weaknesses, opportunities and threats confronting these firms were examined in this chapter.

#### Chapter 4: A critical synopsis of the JSE's AltX

In this chapter a brief summary of the activities of the JSE's AltX was discussed. Furthermore, it provided a comprehensive detail of the advantages of listing on the JSE's AltX, and also discusses the impact of listing on SME operation and expansion. Moreover, this chapter provided a contextual justification which culminated in the formulation of the hypotheses for this study. Consequently, this process leads to the development of a suitable theoretical model/operationalised conceptual framework for the study.

#### Chapter 5: Research methodology

The research approach to be followed and the types of primary and secondary data that were collected is outlined in this chapter. Likewise, the research philosophy of the study as well as the research design was also discussed in this chapter. More so, the econometrics analysis procedure and techniques applied in this study were discussed in this chapter. While, the quantitative and qualitative phase of this study was enumerated in this chapter.

#### Chapter 6: Empirical research analysis, results & findings

The findings of the empirical research analysis and results was presented in this chapter. These findings were presented in various segments such as the questionnaire survey, secondary analysis and the qualitative interview analysis.

#### Chapter 7: Discussions, conclusions and recommendations

In this chapter the findings of the research were interpreted, and led to an ensuing discussion from where conclusions are drawn. Lastly, recommendations were put forward by the researcher, which resulted in the development of a rational model for the JSE's AltX listed firms.

### **1.14 CHAPTER SUMMARY**

The aim of this chapter was to introduce the study, state the research problem, as well as the research objectives and hypotheses. It also explained the reason why this study adopted the pragmatic research philosophy. Moreover, this chapter demarcated and outlined the scope of the study, defined the research limitations, explained the research design and paradigm, as well as the methodology of the study.

This overview chapter commenced with an introduction of the study taking cognisance of the background of the study, the purpose of the study, research questions, research objectives and hypotheses. Furthermore, the research methodology of this study was discussed in detail, covering vital areas such as the research philosophy, research paradigm, research design, the population of the study, sampling method, as well as the data collection method. It also specified the ethical considerations that was considered important in this study. Equally, the assumptions of the study and the limitations of this study were



clearly detailed in this chapter. To conclude, the justification and contribution of the study was elucidated in this chapter, followed by the definition of the key terms of the study. This chapter ended by specifying the orientation (i.e. chapter outline) of this study.

The following chapter provides a detailed concept of entrepreneurship, as well as stipulates the types and nature of entrepreneurship.

## **CHAPTER 2: THE CONCEPT OF ENTREPRENEURSHIP**

### **2.1 INTRODUCTION**

The preceding chapter provided a vivid introduction of this study detailing the background, purpose, objective, research paradigm, scope and demarcation of the study, as well as the structure and contribution of this thesis. This chapter presents a brief history of entrepreneurship, and then goes further to discuss the literature review of entrepreneurship schools of thought, as well as the types, nature and characteristics of entrepreneurship. Afterwards, the role of entrepreneurship was examined, followed by an analysis of the TEA rate in South Africa. Also, a critical review of entrepreneurship in South Africa was conducted in order to appraise the impact of this phenomenon on the national economy.

The aim of this chapter was to conduct a literature review on the concept of entrepreneurship. Also, this chapter provides a theoretical framework for the study and justify the hypotheses that were proposed for this study, which are based on pure reasoning and on the basis of limited evidence - in preparation for further investigation. Consequently, this chapter was used to synthesise realistic logic and data through the systematic detailing of the importance of this study to policy makers, scholars and practitioners. Since literature reviews are an integral part of empirical research, it became sacrosanct that literature reviews were conducted on similar topics that enhanced exposure to the most recent and authoritative theorising and empirical findings applicable to this phenomenon. This was carried out with the intent to prevent the duplication of previous research, and therefore, in the process contribute to new academic knowledge.

### **2.2 HISTORY OF ENTREPRENEURSHIP**

An Irish-French economist and author of 'Essay on the Nature of Trade in General' Richard Cantillon coined the term entrepreneur in 1730, unfortunately, his manuscript was published posthumously (Cantillon, 1755). Cantillon's treatise advocated the concept of *ceteris paribus* throughout his work, his use of methodological individualism was revolutionary (Hodgson, 2007; Piana, 2020). Thus, he concentrated on the cause-and-effect relationships that are exhibited in a circular flow model between economic actors, the factors of production, market price formation and wealth creation. However, his depiction of the term was very elementary in contemporary usage. More so, the term entrepreneur in French parlance was used to portray persons engaged in military expeditions in the 17<sup>th</sup> century. Later on, the word was used to refer to contractors handling government projects. In modern phraseology it means

'one who takes between', 'adventurer' or 'one who undertakes' – that is, a 'manager'. Some scholars nevertheless believe that the word entrepreneur originated from the French expression 'celui qui entreprend', which is loosely translated as 'those who get things done' (Price, 2011).

Although, Jean-Baptiste Say is traditionally credited to be the originator of the word entrepreneurship (Say, 1803), this is not true. In Cantillon's book, the world economy was separated into two parts comprising of; fixed income wage-earners and non-fixed income earners (i.e. the entrepreneurs) who pay for the costs of production but earn indeterminate incomes, due to the speculative nature of pandering to an unknown demand for their products or services (Cantillon, 1755). Thus, the entrepreneur was recognised as active the disruptive force that caused market equilibrium. Say (1803) pointed out that entrepreneurs have an innate ability to spot inefficient combination of resources, therefore they can easily create more productive goods and services that yield higher returns. Furthermore, it is widely believed that entrepreneurs have the capability to create new markets and fresh opportunities. For instance, Alibaba.com, Amazon.com and Ebay.com are basically marketplace yellow pages that displays people's products to buyers all over the world, however remote they might be. Hence, in the process of creating new markets and fresh opportunities, innovative entrepreneurs inadvertently unleashes more entrepreneurs into the business ecosystem, which is a good reason to encourage the spread of this phenomenon across the globe.

Thomas Jefferson the third president of the United States of America was so obsessed with Says' work that he tried to replicate his ideas in his country. This resulted in the industrial revolution that produced successful businesses in America, the United Kingdom, France, Germany and Belgium, such as Ford, Standard Oil, General Electric, Rolls Royce, British Petroleum, U.S. Steel, Bayer AG, Shell, Chevron and Mobil. The rapid rise and development of these MNCs and countries has also motivated new entrepreneurial ventures in the Asian Tigers such as Sony, Samsung, Toshiba, Tata, Panasonic et cetera that has revolutionised world trade. Nevertheless, the drive towards contemporary 'entrepreneur-ship' that generates a gale of creative destruction was expounded by Schumpeter (1934) and embraced by millions of people worldwide through innovation and invention. Today, increased globalisation that is aided by advances in information and telecommunications technologies has led to the creation of many successful entrepreneurial ventures such as Microsoft, Facebook, Google, Apple, Uber and Airbnb (Casson, 2010; Dunning, 2010).

Historical evidences from the national archives of South Africa have revealed that exiled Chinese settlers in Cape Town, South Africa that were brought in by

Dutch colonialists in the 17<sup>th</sup> Century were the first entrepreneurs in the country (Harrison, 1983; Liao and He, 2015). They established farms, fisheries and owned shops that traded their produce through a barter system and helped to create a tax base for the colonialists (Lin, 2014). Later on, the discovery of precious metals and minerals such as gold, diamond, coal, steel, chrome, platinum, nickel, uranium etcetera in the 19<sup>th</sup> century led to the rapid modernisation of South Africa's economy (Mine Restoration, 2015; Buffalo Coal, 2016; Central Rand Gold, 2016; Chrometco, 2016).

Furthermore, while cities such as Johannesburg, Cape Town and Durban became industrialised by the new found wealth, it also inspired conflicts culminating in open warfare between the Boer settlers and the British Empire. Eventually, so many entrepreneurs were lured to these new locations culminating in the development of banks, insurance companies and the JSE (Tsele, 2016). However, rapid migration also created its own problems like Apartheid, which led to the imposition of sanctions and boycotts of South African made goods and services. More so, the dismantling and replacement of a minority apartheid government with a black majority African National Congress (ANC) led government is now creating new vistas of opportunities in the country. Consequently, many entrepreneurs have created numerous start-up ventures that have uplifted millions of people out of poverty with the assistance of sustainable job creation schemes that were promoted by both the private and public sectors of the economy (Statistics South Africa, 2014; Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019).

### **2.3 ENTREPRENEURSHIP SCHOOLS OF THOUGHT**

Entrepreneurship is broadly viewed as a new and promising field of research. In fact, the conceptual and theoretical framework for this discipline is borrowed from similar fields such as economics, social science and business management. As such, many scholars have a misconstrued view of this phenomenon. Contemporary research reveals that entrepreneurship involves the replication of ideas, knowledge, skills/talent and resources to generate an iterative conflation of products and services (see Todaro, 2003; Cope, 2005; Ansoff, 2006; Shane, 2013; Herrington and Kew, 2018; Bowmaker-Falconer and Herrington, 2020). However, the rise of this phenomenon has caused profound variance in viewpoints, which has also led to various arguments, and schisms that emanates from the different scholarly positions and theories that applies to this field of study (Simpeh, 2011; Deakins and Freel, 2012; Shane and Nicolaou, 2013; Herrington, Kew and Mwanga, 2017; Bosma and Kelley, 2019). This is important because various companies have diverse

preconceptions of what listing on an exchange like the JSE's AltX can do for their business, especially from an operational standpoint.

**Table 2.1 Entrepreneurship schools of thought**

	Summary	Authors	Outcome	
<b>ENTREPRENEURSHIP SCHOOLS OF THOUGHT</b>	The Economic (theorists) Approach	An offshoot of classical and neo-classical theories of economics, which is mainly influenced by the Austrian school notion that market arbitrage gives rise to business opportunities.	<b>GEMTEA Rate</b> Dimensions: Micro (Individuals), Context (Nations and Regions) and Time (Annual Assessment)	
	The Psychological characteristics school or entrepreneurial personality Approach	Analyses personality characteristics or traits of successful entrepreneurs or individuals based on entrepreneurial inclinations for risk taking, innovativeness and tolerance for ambiguity.		
	Socio-behavioural Approach	Argues that the social context comprising of the society's culture, capital, learning abilities, risk management, and environmental conditions influences the extent of entrepreneurial participation. This is based on ethnic identification/segmentation and population ecology.		
	Other IB, Strategy models; Growth theory	Merges several isolated theories into one approach, by exploiting net ownership, locational, and internalisation advantages.		
	Phenomenon; Born Global Tools; RBV-MBV Eclectic model SWOT-PEST	It also understudies resources and market based values that are firm specific and location-bound, which makes SME's to rapidly turn global.		
				Cantillon, 1755 Say, 1803 Knight, 1921 Schumpeter, 1934 Kirzner, 1973 Shackle, 1988 Casson, 2010 McClelland, 1961 Rotter, 1966 Kettle Vries, 1977 Szpiro, 1986 Landstrom, 1998 Johnson, 1990 Eisenhauer, 1995 Cromie, 2000 Coon, 2004 Kolb, 1984 Reynolds, 1991 Costello, 1996 Gibb, 1997 Cope, 2005 Ansoff, 1957; 1979 Rostow, 1960 Porter, 1990 Rennie, 1993 Wernerfelt, 1995 Todaro, 2003 Dunning, 2010

Source: Authors' compilation.

Therefore, Nwafor (2007) defines entrepreneurship as the willingness and ability of an individual to seek out investment opportunities in an environment, and be able to establish and run an enterprise successfully based on the identified opportunities. According to Curran and Stallworth (1989) a rigorous definition of entrepreneurship refers to the conception of a new economic entity that is based on an ingenious product or service or, at the very least, one which differs considerably from products or services offered elsewhere. However, the definition that was put forward by Egu, Chiloane-Tsoka and Dhlamini (2017: 5) provided a more acceptable description of this phenomenon. They stated that entrepreneurship is "...the replicative act that involves the willingness to undertake risk, ignite innovation and manage resources (i.e. land, capital and labour) with the sole aim of ensuring profit or sustenance and social change due to necessity or opportunity that can be created by the in-born peculiarities or the dynamic erudition routines of an erstwhile sub-optimal individual".

Given that entrepreneurial studies are interdisciplinary and multifaceted, many scholars have put forward different theories based on the roots of their thinking: in economics, psychology, sociology, anthropology, management and international business (Simeh, 2011). Consequently, the various entrepreneurship schools of thought have been divided into four (4) categories in this study (see table 2.1). These schools of thought are; the economic approach, the psychological characteristics school (or entrepreneurial personality approach), the socio-behavioural approach, and the other models, which are based on direct influence from derived pragmatic representations from various fields of learning.

### 2.3.1 THE ECONOMIC (THEORISTS) APPROACH

The economic (theorists) approach uses economic thinking to develop the entrepreneurial school of thought. Although, classical economic theorists advanced the importance of free trade, division of labour, specialisation and competition, objections have been raised because of their articulation of three modes of production (i.e. land, capital and labour) whose failure to explain the dynamic disruption generated by the industrial age entrepreneurs' caused a break-out in economic thought order. Furthermore, differences amongst the economic (theorists) caused divisions within this school of thought, which are classified below:

**Physiocrats:** This agrarianist school of thought has its origin in France and it is an offshoot of the classical and neo-classicalist school. They expounded theories that supported the government of nature where the wealth of nations is derived solely from productive agricultural labour (Charbit and Virmani, 2002; Allan, 2019). In fact, physiocrats were avid confucianists who advocated

Chinese agrarian policies, instead of massive industrialisation. Some prominent scholars who came from this school are as follows:

- 1) **Cantillon:** He was a merchant, banker and economist who discovered the impact of speculative bubbles on the economy, and also identified the entrepreneur as a risk-bearer. According to Cantillon (1755) there are three classes in the society i.e. landowners, workers and entrepreneurs that stimulates the economy. The recent posthumous publication of Cantillon (2010) by the Ludwig von Mises Institute recognises the entrepreneur as the fundamental economic agent that monopolises individual property rights to achieve profit/reward, as well as take risks that could also lead to losses. For instance, the redistribution of land resources of various nations in postcolonial Africa, made so many Africans to become prosperous, and have created employment opportunities that helped to end the scourge of slavery, as well as poverty (Mthombeni, 2006; Mudhara, 2010; Akoojee, 2013).
- 2) **Say:** Based on his background as a French economist and businessman, Say (1803) argued in favour of competition and non-restrained free trade. He identified the entrepreneur as an organiser of factors of production and a catalyst of economic change. According to Say's Law of Markets inherent in supply is the wherewithal for its consumption (Schoorl, 2013; Allan, 2019). Therefore, the entrepreneur is one who commercially exploits factors of production and plays the pivotal role of acting as a catalyst for economic change and development. The rise of Internet businesses is a typical example of Say's assumption, because people can pay for anything, insofar that it is a packaged product.

**Austrian School of Thought:** This school's origin can be traced to late 19<sup>th</sup> century economists that were based in Vienna, Austria, who based their argument on the presumption that neoclassical methodology is irredeemably flawed (Eugen-Maria and Herbert, 2011; Agafonow, 2012; Holcombe, 2018; King, 2019). Besides, the Austrian school is based on the concept of methodological individualism. This implies that social phenomena result from the motivations and actions of individuals, because of subjective value, sub-optimality and a dynamic equilibrium. Also, they assumed that the demand and supply of entrepreneurs is moderated by the expected reward per se. Finally, this school believed in the notion that methodological individualism and subjectivism aided the manipulation of aggregate taste and preferences, opportunity costs, marginalism, as well as the time structure of cumulative production and consumption, which eventually causes all economic phenomena. The following scholars helped to shape the Austrian school of thought:

- a) **Knight:** Like other scholars in the Austrian school, Knight (1921) holds the notion that entrepreneurs are calculated uninsurable risk takers who

earn the reward of profit from their activities. He noted that risks exist due to uncertain outcomes, which can be predicted by forecasted probability distributions. This allows the entrepreneur to earn economic profits even in a perfectly competitive market (Burgin, 2009). Furthermore, he propounded that the relational assumption with respect to agency theory will motivate an entrepreneur whose small business grows beyond sole proprietorship to issue shares, in order to retain part-ownership in a bigger firm. Hence, the JSE's AltX plays a significant role in entrepreneurship and small business development.

- b) Schumpeter:** He was a former minister of finance of the republic of German-Austria, banker and economics professor. Schumpeter (1934) proposed that the entrepreneurial gale of creative destruction simultaneously creates new products and business cycles, which is primarily responsible for long-term economic growth. He observed that evolutionary environmental dissonance alters the optimum allocation of recombined resources and enhances the profitability of businesses (Humphrey, 2008; Mayer, 2019; Wasserman, 2019). Furthermore, he argued that economic change is caused by high-level innovation, entrepreneurial activities, and market power, such that various economies are simultaneously in the trajectory of expansion, boom, recession and depression.

The tenets of his theories have been divided into two parts; Mark I (concentrating on innovation and technological change) and Mark II (focusing on the impact of large enterprises capitalists' manoeuvres on business cycles). According to Deakins and Freel (2009) Schumpeter's prediction of the demise of the entrepreneur can be attributed to the monopolistic tendencies of very large MNEs whose distinct exploitation of technology through research and development (R&D), marginalises small firms by cost effectively harnessing human resources economically. For instance, the dotcom boom and bust, Canon cameras and Sony Walkman player's replacement by iPods and portable smartphones, as well as the replacement of old desktop computers with notebooks and iPads can be linked to the Schumpeter's cycles of creative destruction.

- c) Kirzner:** According to Kirzner (1973) the entrepreneur's creative alertness facilitates exchange and inspires them to spot opportunities (i.e. as a middleman) for trade by acting as an intermediary between suppliers and customers, despite not owning resources. This process therefore occurs due to imperfect knowledge and costless marketplace information (Brian, 2008). Furthermore, the major distinction between Kirzner and Schumpeter's entrepreneur is that Kirzner assumed that anyone has the potential to become an entrepreneur, in so far they can cope with the set production and technological constraints. While, Schumpeter assumed that only extraordinary people bring about extraordinary events in business that changes technological possibilities, alters convention through innovative activity and, hence, move production constraints (Deakins and Freel, 2009).
- d) Shackle:** The popularity of the Austrian school influenced English post-Keynesian economist George Shackle to carry out research in



unchartered territories in economics. Shackle (1988) contended that the rational assumption which holds forth is that uncertainty and imperfect information creates avenues for talented people to make money. This means that entrepreneurs unleash their creativity in an uncertain marketplace to create opportunities for profit (Littlechild, 2003). Whereas Kirzner's entrepreneur perceives opportunities, Shackle rationalises that an entrepreneur possesses originality, creativity and imagination when making choices. Consequently, the GEM study explores this gap by stating that nascent entrepreneurship can also be associated with pre-start entrepreneurial experiences like education, employment and learning.

- e) **Casson:** As an experienced British professor of economics, his argument is based on the outcome of the synthesis of various theories of entrepreneurship, entrepreneurial attributes, and concepts. Casson (2010) points out that successful entrepreneurs should demonstrate good judgement in managing risky innovations in anticipation for rewards (i.e. profits or salaries). Furthermore, he propounded the leader-follower theory of culture in which leaders set cultural norms in various institutions and condition the characterisation of entrepreneurs, and manager's decision-making. Likewise, he believed that SMEs could lead to regional regeneration. Also, he put forward the notion that entrepreneurs have different skillsets in relation to one another (Deakins and Freel, 2009). This unique skillset guarantees and distinguishes the success of one's entrepreneurial endeavour over another, especially when it concerns the optimum coordination and reallocation of scarce resources.

Finally, according to Casson and Casson (2013) the supply curve of entrepreneurs is inversely related to the demand curve for entrepreneurs, and moderates both the predilection and participation rates in various economies. In fact, the expected reward (i.e. profits) per entrepreneur regulates the number of active entrepreneurs at any point in time. This depends to a great extent on the local market economy, access to resources, financial capital, personal wealth, social mobility and the macroeconomic environment.

**Summary:** Murphy, Liao and Welsch (2006) contend that entrepreneurialism generates a logic dynamic reality that Kirzner (1973) deciphered as consisting of three major conceptualisations due to economic arbitrage, alertness to profit-making opportunities, and the distinction of ownership from entrepreneurship. The commentary of Shackle (1988) rationalises that entrepreneurs are original, creative and imaginative when making choices, although uncertainty and imperfect information creates opportunities for such talented persons to acquire wealth, nevertheless individual sub-optimality causes the ignition of this trait in just a few persons. The Global Entrepreneurship Monitor – GEM (Amoros and Bosma, 2014) explores this compelling gap by stating that nascent entrepreneurship can also be associated with pre-start entrepreneurial involvements like education, employment and learning experiences.

Casson's (2010) concentration on the synthesis process of the theories of entrepreneurship and entrepreneurial attributes and concepts resulted in his notion that unique skillsets guarantee and distinguish the success of individual entrepreneurial endeavour due to the managerial attributes of entrepreneurs (Deakins and Freel, 2012; Holcombe, 2018; King, 2019; Mayer, 2019; Wasserman, 2019). More so, Casson and Casson (2013) suggests a dependence on the propensity of specific circumstance and control of factors of production, as well as the recognition of the impact of social mobility and institutional factors as the foremost enablers of market equilibrium.

Much controversy rages about the benefits that entrepreneurship creates, however, the main criticism of the economic school of thought is that it assumes empiricisms (that are based on microeconomic foundations) can accurately articulate the current level of entrepreneurialism. But the real issue is the growing problem with market and government failure. According to Murphy, Liao and Welsch (2006: 2) market systems are not purely competitive but can involve antagonist cooperation, why resource monopolies can hinder competition and entrepreneurship. More so, it is absolutely critical to note that deception and controls (such as tax schemes) also contribute to market system activity. Furthermore, entrepreneurship can occur in non-market social situations without competition in both private and state firms. However, most of their theoretical propositions (although highly regarded) were rejected and criticised by intellectuals in other entrepreneurship schools of thought.

### **2.3.2 THE PSYCHOLOGICAL CHARACTERISTICS SCHOOL / ENTREPRENEURIAL PERSONALITY APPROACH**

The psychological characteristics school or entrepreneurial personality approach concentrates on the traits of successful entrepreneurs using empirical data from pooled surveys that studies the innate abilities of people (Kerr, Kerr and Xu, 2018; Porcar and Soriano, 2018; Yueh, Wu and Chen, 2020). More so, this approach is premised on the fact that the supply of potential entrepreneurs is limited to finite number of people that have innate abilities which makes them special, and have particular insights not possessed by others (Deakins and Freel, 2009). Furthermore, in order to study the entrepreneurial inclination of individuals, surveys are conducted to ascertain the special talents of people that support the need for achievement, as well as determine the locus of control, which makes them to become successful. McClelland (1961) affirms the significance of this concept by identifying the proposed key competencies of successful entrepreneurs, consisting of, but not limited by factors such as; proactivity, initiative and assertiveness, achievement orientation (i.e. the ability to see and act on opportunities), as well as commitment to others. The following scholars contributed to the development of this school of thought:

- i. **McClelland:** Distinguished American professor of psychology David McClelland contributed immensely to the growth of this school of thought through his study of the achieving society. His Achievement Motivation Theory, motivation Need Theory, and the Thematic Apperception Test (TAT) helped to intuit the real reasons behind the achievement drive of

entrepreneurs. McClelland (1961) asserts the importance of this approach by identifying the suggested key competencies of successful entrepreneurs that can be transmitted from one generation to another. Some of the key traits that were noticed are as follows: Proactivity (i.e. the ability of entrepreneurs to exhibit initiative and assertiveness towards their business; Achievement orientation (i.e. the ability to see and act on opportunities); Commitment to others (i.e. the ability to provide service). Additional studies in this field led to the development of an elaborate entrepreneurial personality approach, which mentions the following attributes as being innate in many entrepreneurs: McClelland's need for achievement; Calculated risk punter; Exhibit high internal locus of control; Passion for creativity; Overtness for creativity; Psychosis for innovativeness; Need for autonomy; Tolerance for ambiguity; Vision; Self-efficacy; Rule/norm breaking oddity; Acceptance of decision responsibility; Solutions developer cum provider; and Tenacity to continue despite failure(s).

- ii. **Rotter:** Jewish American psychologist and adviser to the United States Army during World War II, Julian B. Rotter helped to develop the social learning theory and locus of control. His social learning theory suggested that behaviour is influenced jointly by the social context or other environmental factors, instead of psychological factors alone. Rotter (1966) posited that the expected effect or outcome of human behaviour influences the motivation of people to engage in that behaviour. Since people tend to avoid negative results, if there is a high probability of a positive outcome, many persons are more likely to engage and repeat the behaviour.

Based on these assumptions he developed the I-E scale to access internal and external locus of control (Hock, 2013), which he claimed was like lighting a cigarette and seeing a forest fire. In entrepreneurial personality psychology, he observed that people with strong internal locus of control would likely start a business, in order to earn profits and accolades (Maltby, Day and Macaskill, 2007). While persons with strong external locus of control would rather work for someone or the government, because of the strong influence that external forces beyond their control can regulate their life decisions.

- iii. **Kets de Vries:** Renowned Dutch psychologist that specialises in leadership and management Kets de Vries (1977) suggests that deviant (non-conformist) personality is the main attribute that is innate in most entrepreneurs. He believed that this behaviour is the motivation which drives individuals (who rarely fit in their existing jobs, even if it is with very large firms) to establish their own businesses (Kets de Vries, 2017). Also, as non-conformists they would rather set up their own businesses than to be coaxed to work under laid down rules and regulations as staffs. However, new studies have pointed out that large MNCs' employees can nurture such attitudes as intrapreneurship within the boundaries of the firm.
- iv. **Szpiro:** An Israeli-Swiss financial mathematics professor and journalist George G. Szpiro used mathematical constructs to prove empirically the relative demographic risk aversion around the world. His research finding

reveal that aversion to risk declines as wealth rises, thus strengthening the assumptions of earlier empirical studies (Simpeh, 2011). This is as a result of entrepreneurs diversifying their interests into a portfolio of assets that yields higher returns and future income for them (Szpiro, 1986). For instance, many AltX listed firms have expanded their footprints across the world through vertical and horizontal integration. Consequently, SMEs are reducing the risks that are confronting their businesses (such as political, regulatory and currency risk exposures), while costs are being cut-down, revenue and profits are rising steeply.

- v. **Landstrom:** According to Landstrom (2005) the psychoanalytical oriented tradition assumes that the behaviour of any individual is best understood by a number of intrinsic qualities. However, these traits that have been identified in research is now proving difficult to link any specific trait to entrepreneurial behaviour (Landstrom, 1998). Furthermore, modern entrepreneurial ventures are formed by teams and not by a single individual, so current research needs to use more complex individual situational perception, rigorous concepts as well as sophisticated methodologies.
- vi. **Johnson:** In his article “Toward a multidimensional model of entrepreneurship: The case of achievement and the entrepreneur” Johnson (1990) put forward the notion that entrepreneurs are motivated by the need for achievement. While there is a fundamental lack of empirical proof to support personality traits, there exist evidence in the literature that support the relationship between achievement motivation and entrepreneurship. More so, the need to be viewed as a success in the society motivates many entrepreneurs to begin new ventures.
- vii. **Eisenhauer:** The findings of Eisenhauer (1995) in his article “The Entrepreneurial Decision: Economic Theory and Empirical Evidence” complements Szpiro’s (1986) observation that aversion to risk declines as wealth rises. Eisenhauer (1995) suggests that entrepreneurship is a self-perpetuating process, since successful entrepreneurs are able to increase their wealth, and with more liquid assets can therefore substantially venture into other areas of interest.
- viii. **Cromie:** He observed innovative and enterprising behaviour within existing organisations and found out that entrepreneurs and entrepreneurship are the products of various societal, organisational, and individual factors (Cromie, 2000). Using the General Enterprising Tendency (GET) test he provided empirical evidence that supported the notion that the need for achievement, locus of control, creative tendencies and gauge calculated risk-taking are considered relevant in assessing entrepreneurial inclination amongst entrepreneurs.
- ix. **Coon:** Due to the gaps in entrepreneurial research, a psychologist Coon (2004) defined the personality traits of an entrepreneur as the stable qualities that an individual possesses in most situations. His assumptions relate to trait theorists, and he believed that there are enduring inborn qualities or potentials of an individual that naturally make him an entrepreneur. According to Simpeh (2011) the obvious or logical question on the mind of many researchers may be – What are the exact traits/inborn qualities that identifies entrepreneurs and distinguishes them from normal

persons? The answer is definitely not a direct one because we cannot point at specific traits. However, this school of thought gives some insight into these traits or inborn qualities by recognising the characteristics associated with most entrepreneurs. Consequently, explaining personality traits means making inference from human behaviour. Researchers can therefore use sensory adaptation, perception and positive reinforcements of entrepreneurs as a result of success in similar business ventures to ascertain these specific traits (Coon and Mitterer, 2016).

**Summary:** It has been observed that the main traits of successful entrepreneurs are tenacity, passion, tolerance of ambiguity, vision, self-belief, flexibility and rule-breaking. According to Robinson (2014) most entrepreneurs share a common trait of perseverance, persistence, determination, commitment, and resilience, despite the fact that most of them struggle with repeated failures. Furthermore, entrepreneurs exhibit the ability to spot opportunities and solve societal problems with self-confidence, so that life can be made easier, and, products and services can be made adaptable, better and cheaper (Kerr, Kerr and Xu, 2018; Porcar and Soriano, 2018; Yueh, Wu and Chen, 2020). Timmons (1994) argued that apart from entrepreneurs' having good management skills, they must be ambitious and satisfied with their achievements in order to unleash and inspire high energy in their businesses.

Additionally, Coon (2004) suggests that the stable qualities that entrepreneurs show in most situations are traits such as self-efficacy or confidence, creative tendency, optimism, knack for risk-taking, innovativeness and emotionally resilience. He also noted that entrepreneurs as transformational visionaries have a deviant (non-conformist) behaviour, as well as a strong desire for independence that makes them to be their own boss. However, most trait measurements are not reliable, because human behaviour is not static but dynamic. Besides, individual behaviour changes contingent on specific circumstances and environmental factors.

Like other schools of thought the psychological characteristics school or entrepreneurial personality approach have been subjected to considerable criticism regarding the validity and power of entrepreneurial traits in determining what motivates entrepreneurs. According to Deakins and Freel (2009) this controversy has significant policy implications, since it might become obvious that some regions with low rates of participation, may be excluded from government intervention programs, although, sustained infrastructural and environmental interventions can assist in stimulating the level of entrepreneurial activity in these areas. Enterprising individuals therefore need entrepreneurial opportunities so as to succeed (Reynolds et al, 2002). In the same vein, individuals are known to be motivated to engage in entrepreneurial endeavours due to either necessity (i.e. survival needs) or opportunity (i.e. their need for achievement). Xavier-Oliveira, Laplume and Pathak (2015) observes that poverty or economic inequality tends to surge necessity driven entrepreneurship rates at the discrete level.

Likewise, since the need for achievement ignites the passion to excel in individuals, it remarkably alters and modifies the entrepreneurial inclination of individuals. This leads to problems with the entrepreneurial personality approach, as item test characteristics are not stable and change over time. Consequently, many scholars have criticised this approach due to poor correlation, and the fundamental inappropriateness to discern a specific trait that all entrepreneurs must possess. In fact, this school of thought ignores environmental factors, learning outcomes, the relevance of innovation clusters, and social networks, which are significant moderating factors for entrepreneurial decision-making (Chell, Haworth and Brearley, 1991).

### **2.3.3 THE SOCIO-BEHAVIOURAL APPROACH**

After appraising the remarks of critics of the entrepreneurial personality approach, the new socio-behavioural entrepreneurship school of thought therefore relies on an alternate notion (Kerr, Kerr and Xu, 2018; Centola, 2018; Davis, O'Mahony and Pfautz, 2019; Frank, 2020). This school focuses on the social context and uses the society as the level of analysis (Simeh, 2011). Also, the proponents of this school contends that a society's culture and environment determine the extent of individual entrepreneurial participation levels, since it takes note of indicators such as the nation's tolerance of failure and risk, as well as how entrepreneurs are viewed by the society (Deakins and Freel, 2012). It has been observed that the negative connotation of failure in some societies, blacklists failed entrepreneurs in compliance with bankruptcy laws, instead of encouraging them to learn from their mistakes.

Using socio-behavioural approach the Small Business Service (2004) survey revealed that in the European Union (EU) 40 per cent of people won't start a business due to the fear of failure (this is consistent with the GEM 2016/2017 figure of 40.1 per cent), whereas, in the USA only 26 per cent of the population have a negative connotation of failure. Furthermore, the GEM 2016/2017 global report shows that 31.2 per cent of entrepreneurs in South Africa are undeterred by the fear of business failure (this is a higher figure when compared to the average African region percentage of 26.5). The socio-behavioural school views failure as a learning experience that entrepreneurs can benefit from in order to establish successful businesses. More so, this disposition entails that highly talented individuals who experience business failures must be given a second chance. It therefore requires a modification of existing bankruptcy laws to allow failed entrepreneurs another opportunity to enjoy business success. Based on the recent research in this field, the socio-behavioural approach has been classified into the following groups, based on; the influence of the environment; the role of capital; the ability to learn; and, risk management.

#### **2.3.3.1 THE INFLUENCE OF THE ENVIRONMENT**

Recent studies on entrepreneurship recognises the influence of the environment on differing entrepreneurial participation rates across the world. Although the adaptation of this theory in the study of entrepreneurship is absolutely realistic, it does not explain this phenomenon in detail. For instance,

African-Caribbean's in the UK, blacks in America and South Africa have low participation rates, just like women due to racist and discriminatory societal culture that pervades the entire society. However, Ram and Deakins (1995) pointed out that the Asian community's high participation in small business ownership and entrepreneurship can be associated with barriers to employment rather than any predisposition for entrepreneurship. This means that the motivating factors for entrepreneurial participation can either be necessity driven or opportunity-driven depending on the region or according to gender (Global Entrepreneurship Monitor, 2017; Bosma, Hill, Ionescu-Somers, Kelley, Levie and Tarnawa, 2020).

The Scottish Enterprise (1993) study disclosed that the complexities of factors such as the historical dependence on MNCs, coupled with inward investments produced a dependency culture that required MNCs to provide jobs. This precarious situation has been compounded by the inaccessibility of disadvantaged communities to get business loans, thereby worsening the current entrepreneurial participation rates. In fact, the fear of uncertainty, humiliation, missing payroll and potential failure, as well as the fear of running out of cash, bankruptcy and even collateral property has further worsened the rate of entrepreneurship (Robinson, 2014; Herrington, Kew and Mwanga, 2017).

A comprehensive review carried out by the Scottish Enterprise (1993) on the Business Birth Rate Strategy reveals that improvements in the environmental conditions did not eventually lead to a fundamental shift in business birth rates. Recent debates reinforces the role of spatial variations that maybe difficult to change through investor-friendly public policy. This implies that latent entrepreneurial talent maybe triggered by complex combinations of social and economic considerations. Likewise, over-stated official statistics on business failure rates that ignores the impact of business takeovers, mergers and acquisitions (M&A), as well as entry and exit into the labour market by entrepreneurs have also distorted the participation rates. Furthermore, it has been observed that inter-organisational networks facilitate linkages that enable business development as in Silicon Valley, USA, South East Asia and Germany. In conclusion, efficient networking foster good communications between firms, which in turn contribute to entrepreneurial behaviour, participation and success.

### **2.3.3.2 THE ROLE OF SOCIAL CAPITAL**

Contemporary entrepreneurship literature recognises the role social capital plays in altering entrepreneurial participation rates worldwide (Shé, Burton and Danaher, 2018). This refers to the ability of decision makers (i.e. entrepreneurs) to draw on resources from their social networks through social exchange (Thomas and Murphy, 2019). According to Deakins and Freel (2009) complementary and competing social networks are fissioned together through sociological agents such as the family, community and organisational business networks such as local business clubs, business forums and chambers of commerce. Since the B-BBEE program aims to encourage the active

participation of disadvantaged communities such as blacks and coloured in the economic process, it makes sense to develop the entrepreneurial capabilities of these sub-groups. This creates intense bonding within the environment because of shared societal norms, values, relationships, and therefore reduces the problems that hinders business growth in the country.

Drawing from the resource based view (RBV) of the firm, Sirmon and Hitt (2003) argue that social capital influences important firm activities such as interunit and interfirm resource exchange, FSAs – be it location-bound and non-location-bound advantages, country specific advantages (CSA), the creation of intellectual capital, interfirm learning, supplier interactions, product innovation and entrepreneurship. The influx of business incubators in South Africa is creating avenues for small firms to be guided and mentored until they become large and sustainable overtime through the use of the latest technology and innovation. Examples of this hub in the country includes Hatfield Hub in the City of Tshwane, Transnet Hub, SA Business Hub, The Innovation Hub, Swiss business hub SA, Pick 'n Pay Small business, Raizcorp, Shaduka Black Umbrellas, Seda Incubation, BizQube, Timbali Technology Incubator, JoziHub etc. (Youth Village, 2014). The main advantage of these innovation hubs is that some of them provide fully functional office space, bookkeeping, mentorship programs, market incubated SME products and services, and provide opportunities to network with other businesses, as well as assist them to package loan proposals either individually or jointly as cooperatives.

Shapero and Sokol (1982) suggest via the Shapero Model that strong social capital acts as glue or lubricant binding networks. Social networks are also a factor in determining entrepreneurial entry, especially with respect to nascent entrepreneurship. According to Deakins and Freel (2009:17) “the nature of successful networks depends on the level of trust, which itself will depend on the nature of the business environment (e.g. rural vs. urban) on culture and on regulations”. Consequently, the role of social capital cannot be overemphasised in the contemporary business environment. This entails that entrepreneurial success will become extremely difficult if an SME is not linked with one. The rise of online social networking sites such as Facebook, Instagram, LinkedIn, Twitter, Google+ and YouTube, as well as E-commerce websites such as Amazon, Ebay, Alibaba and Aliexpress have helped to nurture and market the products/services of SMEs globally.

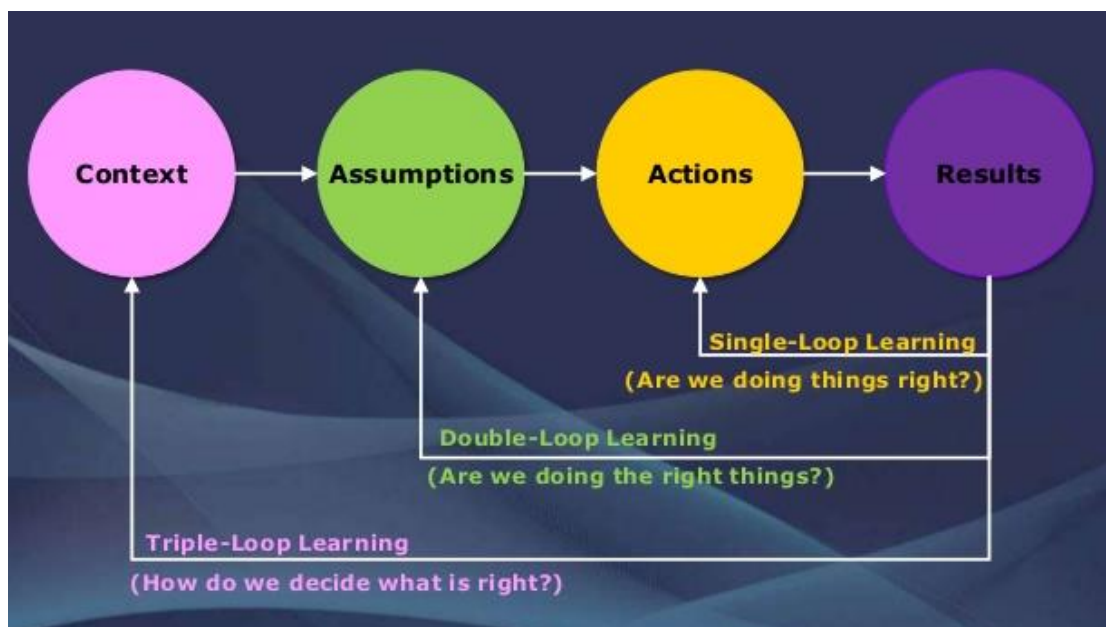
### **2.3.3.3 THE ABILITY TO LEARN**

Recent entrepreneurship studies have centred on the impact of learning on SME performance and competitiveness (Martinez, Serna and Montoya, 2020). Many governments, multilateral organisations, banks, hubs and non-governmental organisations (NGO) have intensified trainings for entrepreneurs in order to increase the entrepreneurial participation rates in their regions. However, most of these training programmes focus on bookkeeping, financial skills, liquidity and debt control. Since these trainings are concentrated on specialised specific tasks, and not really action oriented, it mildly alters the approach of entrepreneurs towards solving real-life business problems. As



such, this has necessitated calls and support from within the industry for mentorship-style assistance as shown on television programmes as ‘The Next CEO’, ‘The Apprentice’ etcetera.

Although, there are few empirical links between formal training and improved performance of small firms, Gibb (1997) proposes that the development of the entrepreneur is affected by the extent of interaction with stakeholders in the small business environment. This implies that learning improves SME interaction and experience, and also triggers entrepreneurial performance. According to Deakins and Freel (2009) the dichotomous approaches to entrepreneurial learning occurs as a result of the combination of processes initiated by Gibb (1997) and Costello (1996). They contended that entrepreneurial behaviour is a dynamic process which is continually evolving and consequently illuminates scholarly viewpoints that the innate abilities of the entrepreneur cannot be static.



**Figure 2.1: Triple loop learning (Source: Olivier, 2017)**

The triple loop learning (as indicated in Figure 2.1) uses reactive actions, reframed assumptions, and transforming context to achieve business outcomes. As a step-by-step process it consists of three parts, such as; the single loop learning (SLL) – which is about following the rules; the double loop learning (DLL) – which is about changing the rules; and, the triple loop learning (TLL) – which is about learning how to learn. All three levels of understanding are important when building a product or service. Hence, firms cannot plan a product release without anticipation and experiencing complete learning. Therefore, the JSE’s AltX listed firms are expected to integrate the complex business environment challenges like the B-BBEE requirements as well as the need to provide employment for the teeming population as a motivating factor that drives corporate entrepreneurship. Un-learning past racial prejudice, and

re-learning how to transform the economy can be said to be radically sufficient when exploring contentious issues like social justice, wealth redistribution and sustainability, because these societal problems are open to different interpretations.

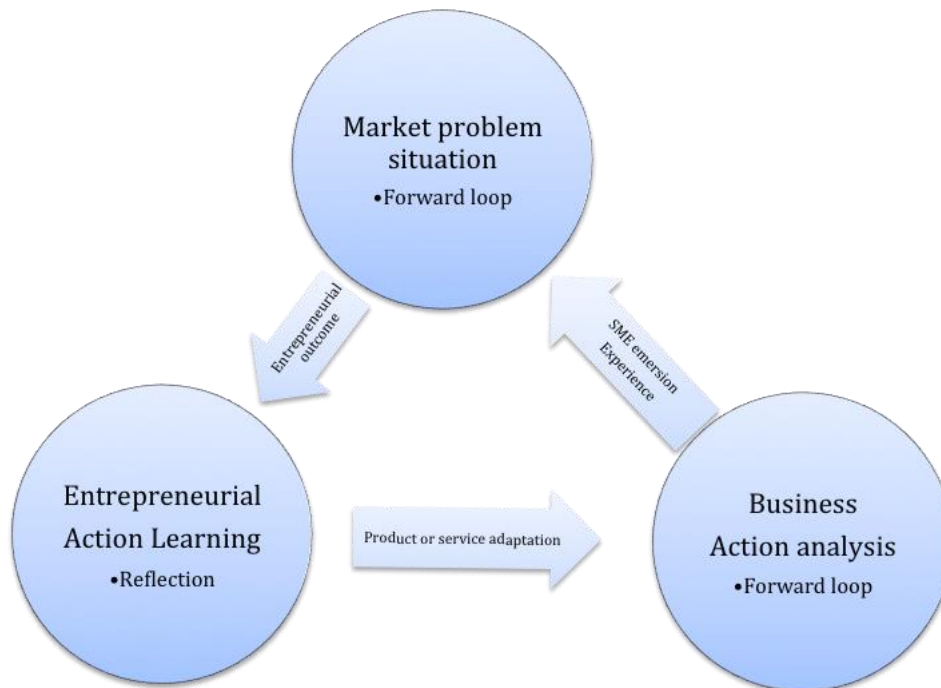
Although this first step learning process is important, it is remarkably simple to undertake, and leads to minor 'quick' fixes or adjustments. Questions such as 'Are we doing things right?' and here's what to do in terms of procedures and rules are taken care of in this learning phase. However, as businesses grow SMEs cannot embrace change without adaptation in the DLL phase. Complicated actions are therefore taken to remediate the business products and services, strategy and outreach. Questions such as 'Are we doing the right things?' Or like Donald Trump normally asks 'What the hell is going on here?' add incredible insights and patterns concerning why this work is taken into perspective. DLL specifies major fixes or changes, like redesigning an organisational function or structure. Finally, the third phase, which is very complex, is undertaken by businesses and leads to paradigm shifts. It entails that firms cannot deal with the unknown without some exploration and imagination using TLL. Questions such as 'How do we decide what is right?' and the principles guiding the reason behind why the firms insists on doing things in a particular way is put in perspective. Consequently, this also explains why different countries of the world have a particular economic type, be it factor-driven, efficiency-driven and innovation-driven. This is thus a combination of the results of various learning outcomes and activities in any economy at a particular point in time be it knowledge-based or resource-based.

Figure 2.2 depicts the entrepreneurial (triple-loop<sup>3</sup>) learning construct, it adopts a veritable platform for entrepreneurs to examine fundamental business concerns/problems, and establish reasons why they occur, so that an action learning process can take over time. An analysis of the market problem situation is absolutely necessary for every entrepreneur. For instance, it can assist in predicting the time that SMEs can list on the JSE's AltX so as to reap maximum returns from share trading. Furthermore, it enables SMEs to know about the size and growth trends in the market, while taking cognisance of competitor's product specification, pricing and services. In fact, specifying the problem situation is fundamental to problem solving, and determining the firms' product life cycle, price, as well as entry and exit strategies. Afterwards, the business action analysis is carried out so that the needs of the business (which have been identified in the SME emersion phase) are determined and solutions proffered. Since most entrepreneurs are mere wishful thinkers that are full of big ideas, carrying out a detailed business action analysis will enable failing businesses to avoid downward spirals. Here, a thorough analysis of the resources that are required for success are evaluated, while the manpower requirements, as well as the investable capital needed are specified. Obviously,

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<sup>3</sup> Simply put 'The Entrepreneurial Triad'.

business goals need to be SMART – specific, measurable, achievable, realistic and timely; concrete and doable (Silverstein, 2009). Expectedly, SMEs that want to list need to provide a detailed company prospectus comprising board composition, financials, share price/allotment information, company secretary, designated advisors, auditors etc. In as much as there is money to be raised on the lower bourse, the JSE’s AltX compliance requirements entails that registered firms should provide full disclosures to the public, so that they can make informed investment decisions.



**Figure 2.2: Entrepreneurial (triple-loop) learning construct (Source: Authors’ compilation)**

Going further, the resultant effect of business action analysis is a highly adaptable product or service that tops charts and ranking in their industry. Consequently, entrepreneurial action learning attracts all the need resources to create marketable goods and services whether the firm operates in the technology sector, media, agribusiness, banking or the stock market. Also, the reflection that place considers the need for modification due to changing tastes and market conditions, and as forward loops occur over time the product becomes mature and is sold worldwide. Evidence from the rapid expansion of Gold Brands Investments’ Chesa Nyama – flame-grilled meat franchise shows how strategic listing on the JSE’s AltX is. Moreover, funds raised can be pushed into R&D in order to develop new products and services e.g. proprietary knowledge development was implemented to make Alaris Antennas a global brand. This means that any firm or country that stops innovating its products is locked in the gale of creative disruption, thereby countervailing sustainable growth and development henceforth. For instance, the dimensions of a product can be reviewed in order for it to be made portable (i.e. conveniently carried about). Entrepreneurial outcomes using these three approaches yields practical

outcomes, such as, the evolution of mainframes to desktops, and from desktops to notebooks, pads and mobile phones. This is what is envisaged to happen to listed firms because as they mature overtime their product and service offering would become an indispensable component of clients' operations and also transform with changing consumer needs.

This construct builds on Gibb's (1997) 'stakeholder' model of entrepreneurial learning that places high premium on the small firms' relationship with the external environment. Likewise, it uses a similar approach to Costello's (1996) 'routines' evolutionary theory of learning and entrepreneurial behaviour proposes that with high technology small firms and entrepreneurs learn to adapt behaviour into routines, which are path dependent. Also, it emphasises that using path dependent approaches enable critical knowledge to be acquired, and the resultant set of rules enables SME learning experience to evolve over time.

Additionally, in as much as organisational learning is concerned, little research throughputs have been established within the entrepreneurship and SME literature area. This is probably because of the lack of appropriate ethnographic and case study approaches that can effectively deconstruct the complex, and often subtle, mix of demographic factors that affects entrepreneurial learning. However, it is necessary that more studies should be undertaken, so that there can be advancements in the theoretical and conceptual development of the entrepreneurial learning literature. In this study, an attempt was made to depict how ethnographic/demographic factors can motivate individuals to take on entrepreneurship as a career choice in South Africa, however, overtime some of them would list and delist their companies due to various reasons. Listing has also been observed to lead to M&As and hostile takeovers, which leads to a discussion on issues dealing with managing the financial/debt portfolio of firms.

This construct is drawn from Schumpeterian dynamic analysis of the forces of change in large MNCs. It also deals with the adaptation of the entrepreneur, as well as the ability of SMEs to engage, adapt, and restructure according to the forces of change, and thus learn from such occurrence and uncertainty. Consequently, this trial-and-error method eventually leads to innovative discoveries and model the nature of entrepreneurial behaviour and development. According to Deakins and Freel (2009:18) "the ability of the entrepreneur, or [complementary skilled] entrepreneurial team, to learn is crucial to their behaviour and ability to succeed. To be successful, entrepreneurs must be able to learn from decisions, from mistakes, from experience and from their networks". Little wonder, all JSE's AltX directors are mandated to go through a director induction programme prior to listing on the exchange.

Moreover, the application of theories of adult learning implies that entrepreneurial experience gained can be transformed into experiential knowledge. In fact, government support for black business set-up is encouraging more racially segregated portion of population to establish

businesses in their locality. Also, the application of Kolb's learning cycle to explain the self-reflective nature of entrepreneurial learning over time focuses on the locus of control of the entrepreneur, and considers that entrepreneurs adapt and develop new behaviour over a period of time (Kolb, 1984; Cope, 2005). Many entrepreneurs are optimistic about their chances of success despite the prevalence of a high failure rate. So, listing on the JSE's AltX will offer SME owners/managers a tentative dynamic learning perspective of entrepreneurship. Correspondingly, the environmental and social explanations theory identifies entrepreneurial learning as a product of the social environment within which the entrepreneur operates. Although this concept is external to the firm, stakeholder participation in the external environment can either make an SME to progress or usurp its operations (Rae and Carswell, 2001; Cope 2005). For instance, issues such as environmental sustainability is on the front burner of host community agitations, which has made numerous firms (e.g. mining companies) to reconsider their mode of operation, even if it negatively impacts on their level of profitability.

Lastly, it should be noted that organisational learning (OL) theories provide evidence that reinforces the relevance of collective learning within small firms. Zhang, Macpherson and Jones (2006) findings from a study of the learning processes on innovation within manufacturing SMEs reveal the importance of intra-organisational learning in innovative firms. Listed firms stand a good chance of adhering to good corporate management practices and growing their firms, who might want to learn one or two things from registered companies that are successful. In fact, the ability to learn helps to explain why some SMEs are innovative, and while some SMEs are either stable or static. In contemporary parlance, entrepreneurial learning is not only restricted to entrepreneurs and SMEs, but also to artificial intelligence in machines. Smart devices study the behaviour of consumers, generate advertisement traffic, analyse information gathered, and thereafter recommend changes to products and services, using a targeted selling strategy. For instance, Moneyweb Holdings' online business has capitalised on its prior experience and competitive advantage in the online financial media sector to develop firm specific advantages that has led to its rapid growth.

**Summary:** The Global Entrepreneurship Monitor (2017) uses the TEA rate to measure the participation rates in different nations and regions. Africans and women tend to have low participation rates, which when probed reveals a fundamental problem which has to do with the lack of adequate access to opportunity due to barriers to employment and funding, risk averseness, low skill and the issue of poor linkages between existing social networks. These countless issues causes aggregate individual entrepreneurial predisposition to be manifested by necessity, arising from the need to survive. Moreover, the general presumption is that MNEs provides jobs and facilitates commerce, while SMEs are survivalist in nature, because they are used to preoccupy poor people and unemployed persons. Considering the fact that in South Africa consumption takes precedence over production in the economy, as a result of the complexities of several factors, as well as the historical dependence on imports, entrepreneurial participation is very low in the country (UNCTAD,

2015; World Economic Forum, 2015). One way to boost the level of entrepreneurial participation is to encourage SMEs to list on the JSE's AltX, where firms can raise cheap funds. Also, black entrepreneurship can be facilitated via the use of B-BBEE schemes to encourage erstwhile racially segregated segments of the population to participate in the mainstream economy.

Furthermore, Reynolds (1991) posits that social networks are the most important social context that relates to entrepreneurial opportunity. Consequently, inter-organisational networks facilitates linkages that enable business development, a thorough case study can be exemplified by business clusters formation in Silicon Valley, South East Asia, Germany and some parts of Africa (Fox and Liebenthal, 2006; World Bank, 2011). It has been observed in similar studies that efficient networks foster good communications between firms, which in turn contribute to entrepreneurial behaviour and success. Besides, there is need to facilitate social exchange, so that entrepreneurs can draw on resources which are available within their social networks. The role of social capital as stated by Sirmon and Hilt (2003) affects important firm activities and acts as a glue or lubricant binding networks as a factor in determining entrepreneurial entry, especially when considering nascent entrepreneurship (Shapiro and Sokol, 1982). SMEs that list on the AltX can tapped from the huge platform that the JSE provides for investors, given the fact that they will benefit from increased visibility and exposure.

Undoubtedly, the ability to learn remains a viable option for SME owners and managers that want to solve the problem of deficiencies in innate entrepreneurial trait (Bosma et al. 2020). Past studies have pointed out that entrepreneurial behavioural dynamism reinforces the notion that the intrinsic abilities of entrepreneurs cannot be static but rather continually evolving (Fox and Liebenthal, 2006; World Bank, 2011). Correspondingly, stakeholder interaction as supported by the World Bank (2011) study has greatly persuaded commentators to key into research supporting the empirical linkage between formal training and the improved performance of small firms. The academe and institutional participants in industry who advocate for mentorship-style assistance that can solve real-life business problems also bolster this argument. For instance, listing on the JSE's AltX makes SMEs more attractive to high quality manpower, who can assist in moderating the effect of the weaknesses of the founders/owners of the company.

Lastly, it has been observed that entrepreneurs learn from mistakes, active experimentation, concrete experience, reflective observation, abstract conceptualisation and networks. Since all entrepreneurs take risks, it is necessary that considerable learning effort should be undertaken so that the production processes (and services) can be improved upon, while minimising the level of uncertainty (Zhang et al., 2006; Deakins and Freel, 2009: 2012). Conclusively, Reynolds (1991) asserts that life course stage, ethnic identification and population ecology can have an impact on the survival of businesses and entrepreneurs. But the experience of people spurred by environmental factors can be the decisive factors that ensure that

entrepreneurs either flourish or fail (Fox and Liebenthal, 2006; World Bank, 2011). Clearly, the AltX provides an opportunity for SMEs to formalise their businesses by assisting them to evolve from sole proprietorship to high growth firms. Consequently, entrepreneurial success can be attained by listed firms who exploit the complex structures and business ecosystem that is provided by the JSE overtime.

### **2.3.4 THE OTHER MODELS/PHENOMENON/TOOLS**

No matter the volume of literature on a particular area of study, there might still be a need to borrow/apply theories from other fields of research. This is because achieving a practical understanding of a subject is not easy at all, especially when it is carried out in isolation. Thus, most studies are interdisciplinary in nature, since ideas that resonate in modern discourse combines both the synthesis and the integration of general knowledge to most phenomena. Likewise, entrepreneurship literatures have greatly considered other models and theories in IB and strategy. For instance, the Resource Based View (RBV) of the firm (although it is not a theory but a tool of analysis) supports the notion that firms exist due to the unique embedded heterogeneous resources and capabilities that cannot be possessed, imitated or built up in a similar manner by competitors (Barney, 2001; Rugman and Verbeke, 2002; Ludwig and Pemberton, 2011; Rugman, Verbeke and Nguyen, 2011; Kozlentova, Samaha and Palmatier, 2014; Miller, 2019). This argument is reinforced by Schumpeterian contention that cumulatively the level of innovation and technological change of a nation can be linked with the rate of entrepreneurship. All things being equal, the higher the number of listed companies in South Africa, the more likely that more people will see entrepreneurship as a good career choice.

#### **2.3.4.1 THE STRATEGY MODELS**

The emergence of Harry Igor Ansoff who was a Russian American applied mathematician, business manager and professor of industrial administration and management revolutionised the field of strategic management. In Ansoff (1957: 1979: 2006) the concept of strategy was used to develop the Ansoff (product-market) Matrix. Due to the rapid changes in the global market structure, he identified (in Figure 2.3) the need for all entrepreneurs and SMEs to develop product lines that can adapt to corresponding market needs. For listed SMEs on the AltX to succeed it is sacrosanct that a detailed corporate strategy be implemented companywide, because when there is no roadmap for business strategy in a firm, such a company will flutter and miss out on opportunities. Furthermore, a typology of four growth alternatives was explicated, which are as follows: (1) Market development, (2) market penetration, (3) product development, and, (4) diversification.



**Figure 2.3: The Ansoff Matrix (Source: Ansoff, 1957)**

During the market penetration stage, entrepreneurs initiate strategic actions to increase the market share of their products and services within existing markets segments, in a low risk scenario. This aggressive strategy involves promoting and distributing the firm’s products/services, increased sales penetration in existing markets, new customer prospecting<sup>4</sup>, price crash, acquisition of rival companies and modest product refinements. Subsequently, in the market development stage, entrepreneurs and SMEs launch new products/services using an expansionary strategy (in a low risk scenario) across various geographical locations<sup>5</sup>. In order for firms to achieve this objective, such companies must sell its products and services to different customer segments in new areas or regions, as well as business-to-business (B2B) buyers, and foreign markets. However, developing new markets for a firm entails that such companies need to scale up, leverage from technological innovations, mass produce goods and services, and sell to markets that are intrinsically profitable and homogenous. This is where listed firms on the JSE’s AltX stand to benefit from the leveraging of share capital financing, without which it will be almost impossible to expand their operations.

The third stage builds on engineering literature and is known as product development. In this phase, entrepreneurs undertake the precarious process of creating new products and services that are targeted at existing markets, in a less risky scenario. According to Kahn (2012) new product development is the transformation of a competitive business opportunity into a quality branded

<sup>4</sup> New customer prospecting can be classified based on geographic segments, new demographic segments, new institutional segments or new psychographic segments.

<sup>5</sup> These locations can be inter-state, intra-state, regional and international sites.



product that can be sold for a reasonable value over time. Every new product is expected to move from ideation through design, manufacturing (or service perfection) to market introduction. As an engineering concept, a prototype, model or design must comply with the standard industry specifications from the fuzzy front-end phase, to high-level and detailed-level product design to product implementation and fuzzy back-end or commercialisation phase (Bruiyar, 2011). However, the entrepreneur and/or management drive this process from lean design stage to production and market launch. AltX listed firm's ability to attract quality manpower would assist these companies to develop products and services that can be sold within and outside the country.

Despite the fact that new product development extends the product range available to the firm's existing markets, it comes at substantial R&D/environmental costs, or by the acquisition of manufacturing or sales rights, or by buying an unknown product and branding it, or via joint development with another company who need access to the firm's distribution channels or brands (Ansoff, 2006). Consequently, it is important that entrepreneurs understand the various drivers of new product development, in order to guarantee iterative production, sales and profitability. This could be customer-centred or induced, inter-departmental team based (considering the legal, marketing, finance, design and manufacturing, supply and customer demands). Also, it could be inspired by an all-encompassing systematic design that caters for the tumbling fortunes of a firm/industry/country or a 24-hour virtual non-co-located innovative and cost effective product development team. Notwithstanding what is the motivating factor for the development of a new product, it must however satisfy the needs and demand of consumers. For instance, Alaris Holdings acquisition of COJOT, Finland, mWave and d.b.a. Alaris USA assisted the firm to consolidate its position as a leading global radio frequency (RF) technology giant (Alaris Holdings, 2019). While Etion's acquisition of Lawtrust helped it to augment its current cyber security capability, as well as diversify its portfolio (Etion, 2019). Similarly, Mettle Investments Ltd. Was able to expand its tentacles into the UK through the acquisition of Reward Investments who provides asset secured loans and invoice discounting facilities to SMEs in the UK (Mettle, 2020).

The last stage of Ansoff Matrix is known as the diversification phase. This process occurs when SMEs intend to grow their market share aggressively via the introduction of new products and services. AltX listed CSG Group was able to diversify its operations in areas such facilitates management, security and risk solutions, which led to an increase in total revenue (CSG, 2019). Consequently, the business undertakes more risk because new product and market development is carried out simultaneously (Aichner, and Coletti, 2013). In the global marketplace, these firms are confronted with the problems of

liability of foreignness overseas, culture shocks and distance. Also, businesses are required to export their products either by land, air or sea, and would need to arrange necessary insurance and documentation for their clearance. Furthermore, firms are required to develop new innovative products and services using state-of-the-art technology, as well as secure office and warehouse facilities, manpower and market these products to new customers. Vunani Limited's (2019) boutique financial services business expansion into fund management, asset administration, investment banking and private equity with international presence in Zimbabwe, Swaziland and Malawi was spearheaded aggressively after it got listed on the JSE's AltX in 2007.

There are two types of diversification namely; Related diversification (concentric diversification and vertical integration); and, unrelated diversification (horizontal diversification and conglomerate or lateral diversification). Related diversification occurs in industries where there are potential synergies between firms in existing businesses (Ansoff, 2006). One type of this kind of diversification is called the concentric diversification. It is the process whereby technologically similar firms leverage their technical know-how and intrinsic capabilities to gain competitive advantage in the marketplace. For instance, Global Brands Investments have been able to aggressively expand its fast-moving franchises and acquire top food brands like BlackSteer and Mama Chakas, in order to gain footprints in niche markets (Gold Brands Investments, 2016). While vertical integration is an arrangement in which the supply chain of a company is owned by that company. Also, it could either be undertaken to gain forward downstream suppliers or to gain backward upstream buyers. Despite the fact that Vunani Limited (2019) is an independent black-owned and managed diversified (boutique) financial services group which exploited the competitive advantage that was unlocked via BEE in 1998, it disposed its property management company in order to acquire Fairheads Benefits Services. Additionally, the application of transformation principles embodied in B-BBEE Codes of Good Practice helped Vunani Limited to become a big financial player, however, it is now envisaging that current compliance demands may render their efforts insufficient to secure the long-term positioning of the firm. Hence, triggering foreign diversification efforts in related markets where psychic distance is low.

Furthermore, it can be observed that unrelated diversification occurs mainly in large corporations known as conglomerates that manufacture unrelated products and services. However, it can also occur as horizontal diversification when a company adds new products or services that are often technologically and commercially unrelated to the current products of the firm. An important aspect in diversification is the adoption of the best strategy that suits a firm's needs, objectives, vision and mission. Essentially, this can be achieved via the

internal development of new products/markets, acquisitions, alliance, licensing, franchising or a combination of various modes of entry (Yücel and Önal, 2015). Since diversification is either an offensive or defensive strategy, it is fraught with inherent risks, which can lead to the rapid growth and profitability of a firm. However, it has led to the destruction of the capital base of many SMEs due to over ambitious diversification that end up leading to divestment, as well as huge loses for companies. Sadly, some inexperienced JSE's AltX companies having raised sufficient funds from the stock market unwittingly engaged in product diversification whose loss component ended-up affecting the firm's working capital and eventually led to the winding-up of some of these firms. Increased uncertainty implies that firms need to conduct detailed feasibility studies in the new market, as well as develop well-adapted products/services given their existing manpower, tech and financial resources.

#### **2.3.4.2 GROWTH THEORY**

Understanding the factorial effects of growth and development is not just an important area in economics, but also the crux of multilateral agencies and supranational bodies mandate. Many scholars have put forward theories that explain the conditions that are necessary for growth to occur, and the conditions that support rapid growth in an economy (Zhang, 2018). Furthermore, growth theories have been used in contemporary literature to predict the GDP growth rate of various countries, and explain why the macroeconomic conditions tend to change the rate of growth over time.

Several studies have also asserted that countries that have a high rate of investment (entrepreneurship), human capital, productivity, and low levels of inflation/deflation tend to grow rapidly. Likewise, countries that are not protectionists (i.e. enforce contracts and offers protection for property rights) tend to grow more rapidly than countries whose legal systems are bogged down by corruption, arbitrary judicial decision-making, frequent radical changes in basic legal principles, ex post facto legislation, and/or just plain lack of prompt and effective enforcement of the law. Consequently, AltX listed firms maybe confronted by endogenous factors which can be managed from within the organisation, as well as exogenous factors that are outside their control. Based on the perceived macroeconomic explanatory variables, several broad categories of growth theory have been put forward (that can be of importance to listed firms, and literature development), as follows: Linear growth theory; structural change theory; dependency theory; new-classical theory; new growth theory; and, property rights.

### 2.3.4.2.1 LINEAR GROWTH THEORY

Worldwide, entrepreneurship has been promoted because the existence of SMEs have been linked to national growth and development. Moreover, the findings of several studies are based on numerous theories that have been put forward in support of this idea. Since, SMEs do not operate in isolation, it is absolutely important that they are aware of these risk factors and consider the impact of their external environment on their operations while carrying out their business activities. This is because businesses operating in advanced, developing and under-developed economies can be influenced by several different factors. In light of the aforementioned, Rostow's stages of economic growth theory attempts to fill the gap in extant literature by stating that all countries exist somewhere in his linear spectrum, and could climb upward through each stage in the development process (Rostow, 1960). Likewise, Schumpeterian creative gale of destruction can catalyse this process. Going further, his deconstruction procedure considered five (5) stages of economic growth, which states that a nation can move from the traditional society, to the transitional stage, and then to the take-off stage, up to the drive to maturity stage, and finally to the age of high mass consumption. The traditional society is a largely agrarian and barter dependent civilisation that has a limited production function and attains the minimum level of potential output for self-sufficiency. For instance, in most least developed countries (LDCs) the economy is largely driven by subsistence agriculture that are limited by inadequate scientific knowledge and an underdeveloped monetary system. Consequently, SMEs that want to survive in the traditional society in LDCs have to exploit opportunities in the agriculture sector value chain given the peculiar environmental constraints that limit their development.

In the transitional stage the pre-conditions for economic take-off such as a rapidly growing infrastructure leads to production surpluses and specialisation. Here, businesses are expected to capitalise on the advanced infrastructure to set-up large companies with very efficient distribution systems. Thereafter, the economy undergoes a process of change for building up of conditions for growth and take off (Milne, 2008). Due to improving levels of education, transport network, banking system, rising savings and the emergence of serial entrepreneurs the economy kick-starts the process for the next stage. Subsequently, the take-off stage incites industrialisation. This is characterised by growing investment levels premised on a sharp stimulus (or multiple stimuli), technological change and regional growth, as well as a stable democratic system. This is the stage most African nations want to be in, if not for the myriad of issues that confront various countries on the continent. Afterwards this would trigger a movement to the next stage, which is known as the drive to maturity. This inspires diversification, innovation, non-reliance on imports, and rising

investment levels with growth in many sectors of the economy. South Africa is a typical example of a country in this phase of growth considering its world-class infrastructure, modern transport network, extensive energy potential, and sophisticated telecommunications facilities. The JSE's AltX was established for high-growth SMEs that can catalyse a seismic growth in the country, especially for businesses that are owned/managed by erstwhile disadvantage racial segments of the population, which can take advantage of the resultant opportunities created post-apartheid era. Finally, this will propel the age of high mass consumption, which is consumer oriented and service sector dependent. In this stage the production of high-tech goods will be promoted. In practice, most nations in this stage such as the United States, western European nations, and Japan concentrates on military and security issues, on equality and welfare issues, and also on developing great luxuries for its upper class.

Unfortunately, most African countries are trapped in the traditional, agrarian and factor-driven ecosystem, excluding South Africa, Egypt and Morocco, which are efficiency-driven economies. However, not all of the preconditions of this theory can apply to every country, just like the stages and transition periods occur at varying interval differing by country, region and continent. According to Hagemann (2009) unrealistic assumptions of the model like perfect knowledge, stable exchange rates, constant terms of trade and the savings rate diminish the applicability of this theory to many underdeveloped countries.

Despite the importance of Rostow's theory, many critics have noted that first world economic realities cannot be used as a yardstick to measure third world countries, whose reliance on agriculture and the extractive industries, makes them prone to economic disturbances due to the misallocation of resources, as well as the heterogeneity of rates of return (Milne, 2008). Also, the rapid development of the mostly communist and undemocratic Asian Tiger countries like China made Rostow's argument to fail. Although in entrepreneurship literature, the movement of nations from factor-driven economies towards efficiency-driven economies, and then to innovation-driven economies (Amorós and Bosma, 2014), simplifies the applicability of this notion, more studies need to be carried out in order to provide an efficient classification framework, that can be appropriate to all countries. Likewise, some pundits have criticised the theory for being historical, mechanical and not dynamic.

Research in neo-classical economics have put forward notions that portray economic growth has been influenced in the long run by the effects of the savings rate and capital-output ratio (using the Harrod–Domar model) and the outcomes of the rate of technical progress (using the Solow model). More so, the endogenous factors (i.e. internal forces) which according to the AK model assumes that policy measures such as investment and subsidies in human capital development, innovation, and knowledge creates positive externalities and spill over effects deepens the level of economic growth (Barro and Sala-i-

Martin, 2004; Acemoglu, 2009; Romer, 2011). Furthermore, it should be noted that R&D causes firms to become monopolistic due to highly adapted FSAs, which restricts free entry into these markets as a result of high costs that is associated with unique technological innovations. Consequently, SMEs in South Africa needs to list on the lower bourse, in order to raise critical funds that can be used to develop new products and services that can be locally adapted and exported.

#### **2.3.4.2.2 STRUCTURE GROWTH THEORY**

The Lewis model, the Fisher-Clark model, as well as the general theory of economic development, and the big push theories have influenced the structure growth theory tremendously, especially with respect to its application to practice. Matter-of-factly, the Lewis model (Lewis, 1954) provides a logical transformation of surplus labour from an agrarian economy towards an urban industrial sector due to higher productivity of labour. This gives a positive externality to SMEs that operate in this scenario. Likewise, the Fisher-Clark Model shows that economic progress necessitates movement from the primary to secondary, and then to the tertiary sector economy (Fisher, 1939). This is based on the notion that the effect of high-income elasticity of demand and low productivity is that an increasing proportion of national income and consumption is allocated to the service sector (Bryson, Daniels and Warf, 2004).

Furthermore, the general theory of economic development states that increasing growth in an industrialised service sector is a key indicator of economic progress worldwide. However, it must be noted that the 'Big' push theories advocate the need for balanced growth across all sectors of the economy due to the interconnectedness of different sectors, so that growth can be uniform and constant across the economy. But opponents support unbalanced growth advocates because there is need for unbalanced growth so that bottlenecks can be removed in the strongest growth industries. Likewise, critics have pointed out that the benefits of industrialisation may be limited because profits may leak out of many developing countries' economies and find their way to developed economies through a process called capital flight. Additionally, urbanisation and industrialisation may create problems such as poverty and slums, with unemployment replacing underemployment due to the problem of inequitable distribution of income. This is why the JSE's AltX was established, so that black businesses can list their companies on the lower bourse, and also assist in the redistribution of income.

#### **2.3.4.2.3 DEPENDENCY THEORY**

Arising from concerns about the problem of wealth redistribution in South Africa, it is important to take a sneak preview of what dependency theory is all

about. This theory is an offshoot of Marxist ideology and raises the notion that capitalist exploitation makes resources to move from the periphery of poor and underdeveloped states to a core of wealthy states, at the detriment of the former (Grinin, Korotayev and Tausch, 2016). Rodney (1972) asserts that European colonialists underdeveloped Africa by exploiting its raw materials and manpower at the detriment of erstwhile well-established African territories. Consequently, under-developed countries ought to look inward, using all the state apparatus such as imposing trade barriers that makes inward investment difficult, and encouraging entrepreneurship, while nationalising state assets. It is important to note that the fall of communist Soviet Union led to the collapse of this theory. Although state firms have been considered corrupt and inefficient, Asian Tiger countries like China have proved beyond reasonable doubt that this policy is effective if surplus labour is available. The JSE's AltX is expected to assist in facilitating B-BBEE transactions that would assist to reduce this malaise confronting the nation.

#### **2.3.4.2.4 NEW CLASSICAL THEORY**

The New Classical Theory advances the notion that countries need to liberate their markets, encourage entrepreneurship, reform labour markets and privatise state owned industries, so that development can take place (Snowden, 2007). Increased globalisation of the world economy gives rise to this theory. Moreover, this theory is supported by both the International Monetary Fund (IMF) and World Bank. This is because trade liberalisation promotes free trade, intensifies competition, weakens domestic monopolies and creates a low inflation environment where sustainable growth and development thrives (The World Bank, 2014). Based on this theory, it is anticipated that free market forces can propel listed SMEs to expand their operations locally and international within a short period of time.

#### **2.3.4.2.5 NEW GROWTH THEORY**

Unlike other growth theories, the new growth theories proposes that knowledge is the key driver of economic development because is not subject to diminishing returns. Contemporary studies reveal that the role that knowledge creation has on productivity is enormous, hence requires that countries should invest in institutions that develop and share knowledge in the economy (Romer, 2011). Nonetheless, the new growth theory as an endogenous growth theory does not support the assumption that external forces cause economic growth, instead it assumes that investment in human capital, innovation, and knowledge are significant contributors to economic growth. Furthermore, the proponents of theory believe that private sector R&D needs to be supported by government, so that inward investments and FDI can channel sophisticated knowledge and resources to host countries. However, quasi-public goods and essential utilities needs to be strengthened by government financing in areas such as power, water, oil and gas sectors that are dominated by natural monopolies. For this theory to be applicable to South Africa, there must be concerted effort to develop the skill base in the country in order to support innovation and creativity in the Fourth Industrial Revolution (i.e. 4IR or Industry 4.0).

#### 2.3.4.2.6 PROPERTY RIGHTS

Soto (2000) points out that the legal structure of property and property rights determines which country attracts the greatest quantum of growth and development. Thus, economic change in developed countries can be traced to the transformation from predominantly informal, extra-legal ownership to a formal, unified legal property system. He observed that less developed countries are confined to poverty because documentation is limited (due to the absence of property rights), leading to the emergence of large hidden economies and the suppression of formal business activity. Hence, the lack of well-adapted property rights act as a constraint on economic development. Also, there is need to convert dead or dormant capital, since assets cannot be freely exchanged or given a market value when ownership rights are not attributed to them. Therefore, value addition is absent in such economies, and the informal sector dominates the formal sector. In a vicious cycle of subversion, income earned are not taxable, and banks do not give loans to undocumented businesses due to high business risk and exposures, then businesses remain in inertia, subsequently stagnating the economy. For this trend to be reversed, there is need for the formalisation of businesses and contracts, as well as the listing of SMEs on the stock exchange, so that value added can be properly measured. The JSE's AltX was established to cater for SMEs that crave for legitimisation, exposure and growth, this is possible due to the stringent corporate governance requirement of the JSE which protects both investors and the property rights of shareholders.

#### 2.3.4.3 INTERNATIONAL NEW VENTURE (INV)

In international business and entrepreneurship literature, international new venture (INV) is a new form of rapidly internationalising firm. They are young but globally focused firms that become international within three years of commencing operations as a start-up. According to Oviatt and McDougall (1994: 49), "*An INV is defined as a business organisation that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries*". Lakew (2015) posits that INVs exploit and integrate transaction cost analysis, market imperfections, their core competencies and internalisation theories when building a sustainable multi-regional and intercontinental business overseas. More so, going global implies that these firms must overcome foreign barriers to entry, seamlessly coordinate their value chain operations, consider geographically and culturally proximate markets and accurately time their entry into various markets abroad. Thus, these factors determine their mode of penetration, be it rapid or incremental internationalisation.

Furthermore, these global start-ups' internationalisation can be tied to a broad-based expansion, firm sustainability and positive performance. In fact, INVs invalidate the growth theories that advance that firm expansion is a slow and lengthy process (Senik, 2010). This is because INVs exploit high order growth entry modes with rapid expansion, which is common in high-growth technology reliant companies and knowledge-based SMEs. Moreover, they could be born-



globals, born-again globals, inward internationalisers and traditional internationalisers. For instance, Alaris Holdings Limited is an example of an INV that is registered on the JSE's AltX. Its telecommunications technology radio frequency antenna business is about two decades old with 95 per cent of the group's revenue being generated from exports to North America, Europe, South America, Asia and Africa.

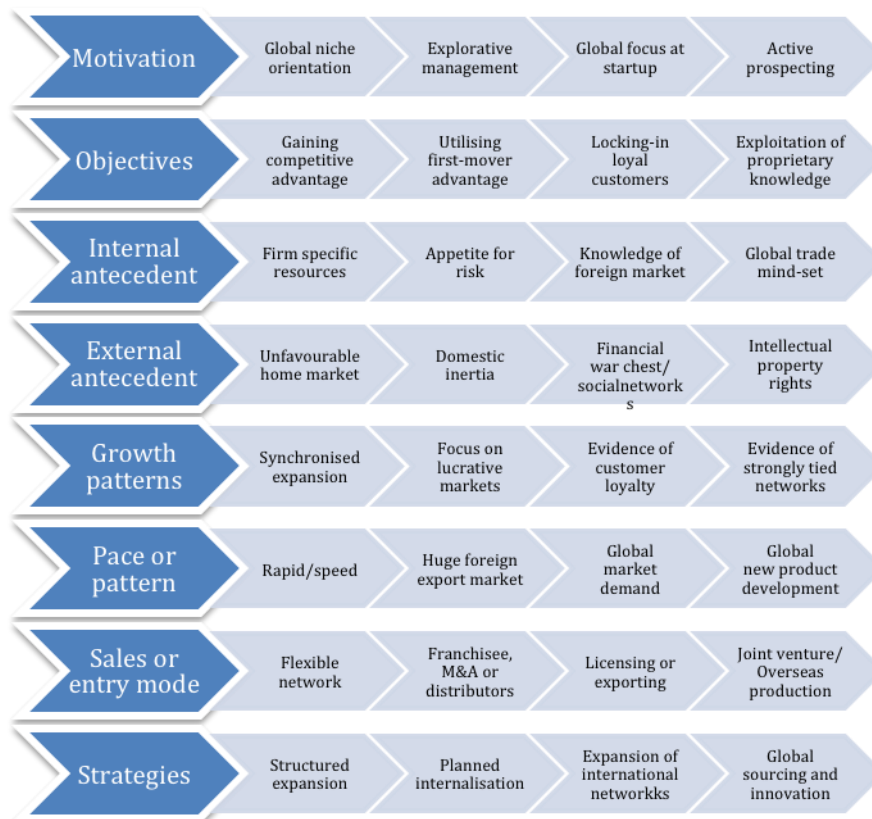
#### **2.3.4.4 BORN GLOBAL**

In entrepreneurship literature, the internationalisation process of SMEs can be conceptualised using the stage theory approach, network approach and the born global approach (Ferguson, Henrekson and Johannesson, 2019; Garcia, 2019). According to Hynes (2010) the stage approach proposes that the internationalisation process of SMEs occurs gradually in markets with close proximity to the domestic market due to cultural and distance barriers. This definitely explains why most listed firms on the AltX sell their products/services in neighbouring countries. However, Lakew (2015) posits that the network approach is premised on the fact that successful internationalisation is dependent on SMEs developing networks and relationships to facilitate this process. One way to exploit social networks is for the business executives of SMEs to join local chambers of commerce. Moreover, once an SME can attract international investors to buy its shares or export its products/services overseas, it begins the firm's internationalisation process. Nevertheless, while the stage and network approaches assume that firms become international after operating in local markets for a period time, the born global or global start-up firm has a global orientation from the onset. Furthermore, born global firms from inception, seeks to exploit strategic competitive advantage from the use of resources, networks and the sale of outputs in multiple countries (Oviatt and McDougall, 2005).

According to Lakew (2015: 112) "born global firms are commonly defined as achieving foreign sales in a period of two to five years from their establishment, in addition to having at least 25 per cent of their income from foreign sources, and operating in at least five countries". Recent studies carried out by Knight and Cavusgil (2004), Oviatt & McDougall (2005), Gabrielsson, Kirpalani, Dimitratos, Solberg and Zucchella (2008), Nordman and Melen (2008), Zhang, Tansuhaj and Mccullough (2009), Bosma and Levie (2010), Senik (2010), Amorós and Bosma (2014), and Lakew (2015) have proved that most SMEs are getting internationalised at very rapid pace across the world due to improved telecommunications facilities and the use of the internet. According to Garcia (2019) rapid digitisation is key for born global SMEs expansion, as it allows them to creatively cut costs by simplifying trade operations, providing wider access to the global marketplace and facilitating access to business networks, market information, and alternative sources of financing. Also, expanding into foreign markets with great speed really proves to be beneficial strategy for SMEs in order to cope with rising demand, gaining access to cheaper inputs, reducing currency risk and exploiting host country managerial talent etc. Recent studies of the JSE's AltX reveals that listing has assisted many SMEs to turn global within the first three years of operation.

Senik (2010: 56) finds that the motivation to internationalise is driven by a proactive – global niche markets that has been spotted by the committed management of born global firms who from inception of the business are engaged in an active search for new markets abroad. More so, born global SMEs are inspired by their objective of gaining absolute competitive advantage, probably as first-movers, so as to lock-in loyal customers, at same the time capitalising on the proprietary knowledge over other competitors. Furthermore, the internal antecedent of entrepreneurs plays an important role in born global firms. The firm specific resources, low risk averseness of entrepreneurs due to manager’s experience and knowledge of foreign markets, help to shape the global trade mind-set of these firms. Likewise, external antecedents such as access to foreign social networks and unfavourable home market conditions inspire entrepreneurs and force SMEs to become born global. Interestingly, the advancement of technology, the democratisation of market information, and the lowering of cultural barriers due to globalisation assist in facilitating this phenomenon (Garcia, 2019). For instance, in South Africa strikes, currency risk and nationalisation schemes are driving white entrepreneurs into foreign markets. Alaris Holdings have used this strategy to drive sporadic revenue streams abroad. Also, SMEs that hold patents, franchises (like Gold Brands Investment’s Chesa Nyama foods), trademarks, copyright, industrial design rights, and in some jurisdictions trade secrets have critical proprietary knowledge (like Alaris Antennas) that can be significantly exploited and protected abroad. Most importantly, the listing of shares of SMEs on the stock exchange (like the AltX) gives listed companies an edge over others when internationalising into foreign markets because of these SMEs’ financial war chest.

An overview of the Born Global Model is illustrated in Figure 2.4 below. According to Bell and McNaughton (2000: 179) the growth patterns of born global firms involves concurrent, near simultaneous domestic and export expansion that is focused on lead markets with evidence of consumer followership and strongly tied networks. Similarly, these firms expand rapidly using internalisation strategies such as licensing, franchising, exporting, distributorships, overseas production, joint ventures and M&As to target niche markets abroad. However, born global firms must structure their expansion drive with perfectly timed internationalisation schemes that capitalise on global sourcing and new market development.



**Figure 2.4: Born Global Model Overview (Source: Authors' compilation)**

Besides hyper competition and globalisation, the emergence of born global firms has been spurred on by global networks, which are facilitated by high tech and a borderless marketplace. As well as global outsourcing, and an increase in demand for globally customised products. The idea is that when an SME lists on the JSE's AltX it should be able to scale up immediately, and start exporting as soon as possible. Gabriëlsson, et al. (2008) classifies internationalising SMEs into the following classes:

- (i) Born Globals – These are SMEs with the potential for accelerated internationalisation and a global market vision.
- (ii) Born Again Globals – These are SMEs that attempt to internationalise with limited success. They then turn to building up domestic support and later return to internationalisation by means of great leaps and a global vision.
- (iii) Inward internationalisers – These are SMEs that import intermediates and components from global sources and/or import R&D and internationalise rapidly through foreign sales.
- (iv) Traditional internationalisers – These are the usual more slowly internationalising SMEs, a subset that includes small spin-offs from multinational enterprises.

Bosma and Levie (2010) indicate that there is evidence worldwide of what researchers call the born global effect. More than half the population of entrepreneurs in developed countries, and around a third in developing

countries, start-up businesses with plans to gain market share from overseas. In contrast to the traditional theories of entrepreneurship, born global firms ignore established domestic markets in favour of foreign markets. Born global firms internationalise at a rapid pace – usually within three or less years between the initial domestic establishment of the firm and its first entry overseas (Senik, 2010). As earlier stated, according to Lakew (2015) 25 per cent of the sales of a born global firm must be from international markets. These companies use high tech driven and niche market oriented proactive international strategy to pursue its growth focus (Knight and Cavusgil, 2004). The downside of these kinds of firms is that they do not possess a proper organisational capability, unlike established firms that have verified routines, practices and structures. Therefore, the knowledge these firms have originates from the founders of born globals', without whom the company might fail (Nordman & Melen, 2008). In fact, most born global firms lack experience and dynamic resources (Senik, 2010). Expectedly, listed SMEs should be able to internationalise and develop a proper organisational structure that will help them to transition to the JSE Main Board.

#### **2.3.4.5 BORN-AGAIN GLOBAL**

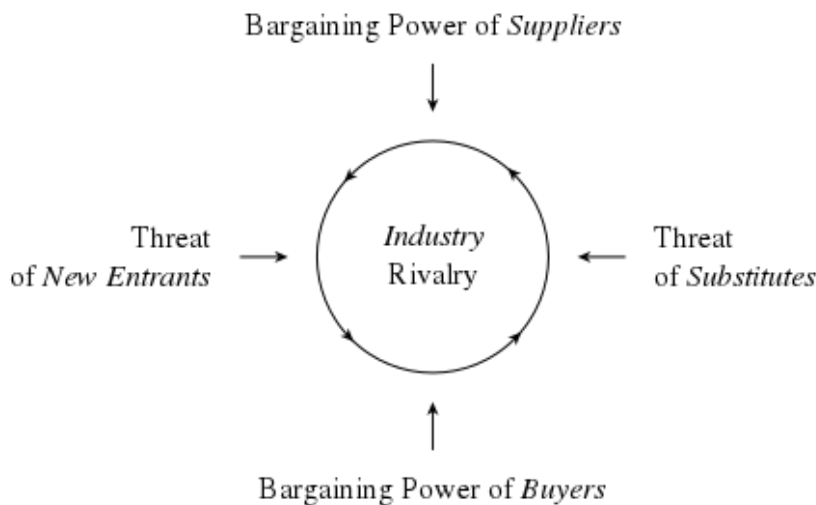
According to Bell, McNaughton and Young (2001) born-again global firms are those companies that operate for a long-time in the domestic market before rapidly internationalising, due to their idiosyncratic traits. Sometimes, these firms are referred to as domestic-based SME exporters. Furthermore, their change in orientation can be as a result of an external shock, market failure, tight regulation, expropriation, saturated markets or as a response to domestic market risks, which requires the firm to pursue an international diversification strategy, hence leads to an international market focus by these firms (Lakew, 2015). Besides, this sudden change towards internationalisation could also be a strategic response to critical events, such as a change in ownership composition and management, a takeover by another company, as well as due to M&As, JVs or client followership in and out of the country. It was been observed that a generational change at the chief executive officer or board room level can also lead to a shift towards global markets, especially if the CEO or director(s) have international education and experience (Schueffel, Baldegger and Amann, 2014). Sheppard and McNaughton (2012) find that most born-again global firms operate for at least 28 years in the domestic market before going global, which explains why they have a remarkably large size, leaner R&D budget and their foreign engagement in more countries than the born-global firms.

Playing at the global level imply that born-again global firms learn from foreign markets, modify their products and services to suit market needs (i.e. they implement glocalisation) and are more competitive than their domestic rivals because of their innovative, proactive behaviour and risk-seeking engagements across borders as international new ventures do (Schueffel, Baldegger and Amann, 2014). Etion (formerly Ansys) is an example of a born-again global firm that is currently listed on the JSE's AltX. Despite been in existence since the 1980's, it was merging with its British and American subsidiaries that helped to

rapidly change the company focus towards cloud-based reseller direct subscriptions for its cyber security business. This made the company to become more agile to international opportunities. Just like, Mettle Investments Limited whose subsidiary Mettle Corporate Finance grew organically before it started considering acquisitions overseas due to BREXIT (a portmanteau of British Exit), Coronavirus Disease 2019 (COVID-19) pandemic restrictions, and the impact of the B-BBEE regulation on its South African business. This is because the company was not ready to give up shareholding or ownership.

#### **2.3.4.6 RBV – MBV**

Contemporary entrepreneurship theory is interdisciplinary in nature. This gives rise to a literature that is related to strategic management, international business (IB) and economic theory. In fact, the rubrics of entrepreneurship theory support the notion that entrepreneurs are the driving force of the whole economic system (Wernerfelt, 1995; Todaro, 2003; Dunning, 2010; Bosma et al. 2020). But the main economic problem has to do with how to measure the performance of firms. As discussed in the introductory part of this thesis, this study attempts to measure the performance of listed firms in South Africa. For this to occur, it is important to employ a tool of analysis which can be either the resource based view (RBV) or the market based view (MBV). The RBV strategy concentrates on identifying and exploiting available firm resources, while the MBV strategy focuses on company policies, which are based on the trends and the nature of the firms' industry's environment. For listed SMEs to be successful, there is need to consider both viewpoints. Furthermore, since the MBV uses objective exogenous approach to explain how sustainable competitive advantage can be gained through astute market positioning, it is imperative that listed firms carryout an external risk assessment, as well as opportunity exploration that can take advantage of the prevailing economic situation of the country. Also, because the MBV employs the Porter's five forces that take cognisance of the product life cycle of SMEs in its analysis, listed firms should undertake a thorough feasibility study before implementing their corporate strategy companywide.



**Figure 2.5: Porter's Five Forces Model (Source: Porter, 2008)**

The Porter's Five Forces depicted in Figure 2.5 above is used to predict SMEs competitors' likely course of action and to determine a firm's strategic position. The end product of this model analysis is to ascertain the attractiveness and unattractiveness of a particular line of business based on the overall industry profitability or otherwise (Porter, 2008). It has been observed that changes in the environment require periodic business unit reassessment due to the overall change in industry information. An attractive industry does not imply that all firms in the sector would return the same level of profitability. This is because some firms are able to fortify their core competencies, business model, as well as networks to achieve profits that are above the industry average. According to Porter (1990) the five forces include the three horizontal competition and the two vertical competition. The former comprises of the threat of substitute products or services, the threat of established rivals, and the threat of new entrants, while the latter comprises of the bargaining power of suppliers and the bargaining power of customers. Wernerfelt (1995) thus argues that this tool can be used together with the RBV in order for firms to develop a much more formidable strategy, by adopting this simple perspective for accessing and analysing the competitive strength and position of an SME. Similarly, the RBV uses an endogenous approach through subjective value chain analysis and product matrix to identify valuable tangible or intangible resources at a firm's disposal. The RBV assumes that firm resources are heterogeneous in nature, immobile, valuable, rare, inimitable, and substitutable (Ludwig and Pemberton, 2011; Kozlenkova et al. 2014). Listed firms on the JSE's AltX are more likely to gain access to investors, suppliers, bankers, distributors and customers.

#### **2.3.4.7 ECLECTIC MODEL**

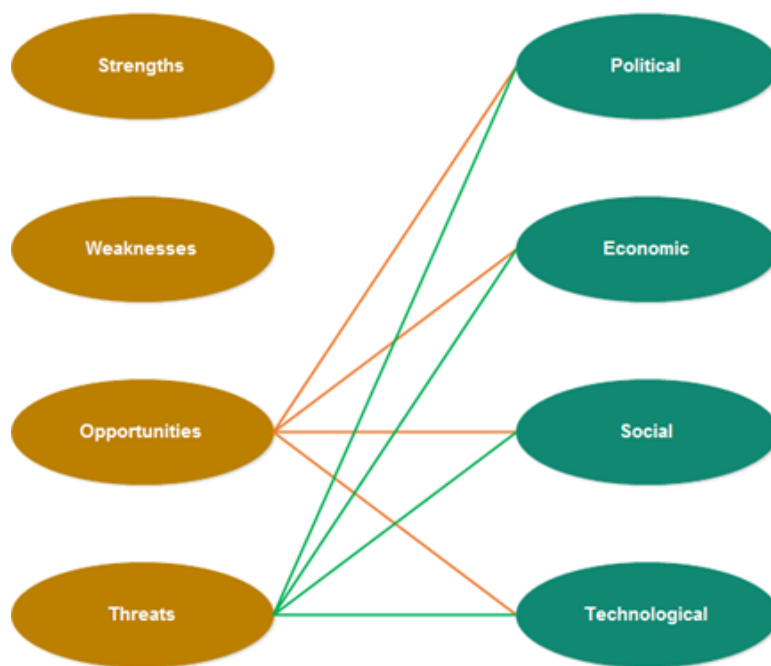
The eclectic paradigm utilises the ownership, locational and internalisation advantages (OLI model) as applicable in internalisation theory to explain how cost advantages aids entrepreneurial progress (Dunning, 2010). It highlights the importance of entrepreneurial skills, trademark, production technique and

returns to scale. Thus, by manipulating location bound FSAs, firms can easily exploit their core competencies and in the process outmanoeuvre rival competitors. That is to say, if firms can appropriately tap their competitive advantages, such enterprises gain internalisation advantages, hence choose the best forms of market entry or exit. SMEs that list on the AltX will definitely exploit the OLI advantages more than their non-listed peers. The greater the net benefits of internalising cross-border intermediate product markets, the more likely a firm will prefer to engage in foreign trade. Likewise, the OLI model states that the existence of raw materials, rightly priced skilled labour, and tax legislation influence on the market potentials of enterprises and ultimately leads to FSAs that are non-imitable. This explains why in Africa most entrepreneurs are survival or necessity-driven, with very few instances of opportunity-driven entrepreneurship taking place on the continent (Acs and Szerb, 2011; Simpeh, 2011; Deakins and Freel, 2012; Amorós, Bosma and Levie, 2013; Bosma, 2013; Shane and Nicolaou, 2013; Amorós and Bosma, 2014; Bosma et al. 2020). Listed firms leveraging on their capital raising potentials can easily expand, explore and conduct R&D across different locations cost effectively overtime.

#### **2.3.4.8 SWOT – PEST**

In an era of globalisation and cross-border competition almost every company, be it large or small usually performs some sort of critical appraisal of their business and environment before commencing/expanding operations, in order to increase their chances of success. Historically, Harvard professor and consultant Francis Joseph Aguilar in 1967 created the scanning tool ETPS, which was later tweaked as PEST (Aguilar, 1967). For SMEs that intend to list or expand, it is a must for them to convey detailed information in the company's prospectus/annual statement using available scanning tools. Modern entrepreneurship literature utilises the political, economic, social, technological, legal and environmental (PEST-LE) analysis to determine the features of a market through a bird's eye view. This could make or mar a business given the high level of competition in South Africa. Also, businesses can ascertain specific trends and indices that are exogenous when considering how the macroeconomic perspective influences their industry, the rate of economic growth and development in a nation. Similarly, Harvard trained consultant Albert S. Humphrey while working at the Stanford Research Institute (now SRI International) in the 1960's developed the SOFT analysis (now called the SWOT analysis) as a strategic long-range planning tool (Humphrey, 2005). This endogenous perspective of the internal environment considers the strength, weaknesses, opportunities and threats (SWOT) analysis in examining products and services that are firm specific (Konopik and Lindgren, 2010; Davis, 2013). It has been observed that aggregate entrepreneurial activity is pro-cyclical and can result to a contemporaneous shift in economic activity (Deakins and Freel, 2009). Consequently, all SMEs that want to list on the AltX should carry out a thorough appraisal of their activities, so that they can become sustainable overtime.

Furthermore, the PEST analysis monitors how changes in the business environment can create great opportunities for entrepreneurs, and also cause significant threats. In South Africa political instability, corruption, rising crime rates, B-BBEE implementation, as well as the ongoing plans to nationalise private firms pose serious risks to investors. Likewise, on the economic front the country's GDP appears to be stagnating, while unemployment rate is rising and the exchange rate is falling. However, since the economy is well developed and access to capital is relatively easy, SMEs can use listing on the AltX as an opportunity to get cheap capital for expansion. Also, socio-cultural factors such as rising population growth, higher levels of educational attainment and expanding markets are positive indicators that can increase the chances of business success (Bosma et al. 2020). Similarly, since South Africa is an efficiency driven economy, it has the capacity to grow its innovative capacity using modern technology, as well as export its products/services to neighbouring countries because such innovative processes are rare on the African continent, hence, they will be welcomed in these markets. Therefore, this implies that the economy of the country is attractive to almost all industries, and investments can be easily scaled up for mass production to take place.



**Figure 2.6: SWOT – PEST Analysis (Source: EdrawSoft.com, 2017)**

In Figure 2.6 the relationship between the SWOT and PEST analysis is depicted above. The SWOT is used to frame an entrepreneur's idea or product, while the PEST is used to illuminate the environmental factors that affect businesses. The succeeding chapter of this thesis applies this tool, so as to assist in evaluating the performance of listed SMEs on the JSE's AltX. Interestingly, most entrepreneurs conduct a PEST analysis before a SWOT analysis is carried out. This is because most businesses consider the SWOT analysis to be un-rigorous and ad hoc in nature, hence, the Porter's five forces was considered more appropriate by the researcher to predict competitors' likely course of action (Todaro and Smith, 2009; Deakins and Freel, 2012;



Bosma, 2013). More so, it is important to note that the PEST chart helps to identify potential SWOT factors. Nevertheless, one must bear in mind that these tools have overlapping outcomes despite being different. Many studies have revealed that most SMEs fail due to ill preparation, especially as a result of a poorly conducted feasibility studies and business plan (Amorós and Bosma, 2014). Why the failure rate appears to be high worldwide, conducting a SWOT and PEST assessment would significantly reduce the problematic factors that are associated with starting and running a business.

It has been observed that the most significant risks confronting the JSE's AltX listed SMEs are strategic risks and financial risks pertaining to compliance with regulations, credit risks and foreign currency exposure. Likewise, operational risks such as compliance with safety standards, rising energy and input costs creates serious problems for SMEs. Recent strike action and government threats to retrieve mining rights, licenses and farmlands are also causing reputational damage to most firms. Despite the high risk exposure of SMEs, most firms can benefit from listing on the AltX when they use their share capital to fund both short and long term growth, *ceteris paribus*. Consequently, numerous listed firms have been able to expand their geographical footprints by exploiting low cost share capital financing together with a mix of debt finance.

#### **2.3.4.9 GEM TEA RATE**

According to Smith-Hunter and Boyd (2004) Weber's Disadvantage Theory contends that those who exit the mainstream economy, as a result of discrimination turn to business ownership as an alternative to the labour market. This explains the reason for the existence of ethnic entrepreneurship and copreneurs i.e. female co-owned organisations (Hisrich and Peters, 2002). However, Nwafor (2007) and Akoojee (2013) observe that most black (i.e. B-BBEE) entrepreneurs are overtly positive about starting a business despite being risk averse and predominantly low skilled. Hence, they compound the high failure rate in this region.

In order to accurately measure the level of entrepreneurial activity, the GEM estimates both the entrepreneurial opportunity and capacity in a country, considering indices such as demography, education, economic infrastructure and culture (Deakins and Freel, 2012; Amorós, Bosma and Levie, 2013; Bosma, 2013; Shane and Nicolaou, 2013; Amorós and Bosma, 2014). Based on national data, opportunity-driven entrepreneurship is dominant in white/upper class communities, while necessity-driven entrepreneurship is very common in poor rural/township areas in South Africa. More so, the GEM report measures differences in the level of entrepreneurship activity between various economies. This makes it possible for the GEM study to determine national levels of entrepreneurial activity, as well as the factors that enhance entrepreneurial activity (Amorós and Bosma, 2014; Bosma et al. 2020).

Furthermore, the TEA rate uses the individual survey data relating to the process of starting a business and those running new businesses that are less than 3 ½ years old. Studies carried out by researchers such as Amorós, Bosma

and Levie (2013), Bosma (2013), Shane and Nicolaou (2013), and Amorós and Bosma (2014) reveals that as a percentage of the adult population, these rates tend to be highest for the factor-driven economies, and decline with increasing levels of GDP. According to Kelley, Singer and Herrington (2016) Africa's TEA rate of approximately 30 per cent (which are mostly necessity-driven entrepreneurship) is the highest in the world. Herrington and Kelley (2012: 17) reveal that Africa's economic pulse has quickened, infusing the continent with new commercial vibrancy. This is buttressed by the real GDP growth rate of 4.9 per cent, which has continued to rise despite declining rates across the world. Expectedly, many SMEs would want to list on the lower bourse, so as to propel their entrepreneurial intentions to the next level.

**Summary:** Following an analysis of various models, theories and tools of analysis, it is obvious that listed SMEs on the AltX need to pursue growth strategies, so as to increase their revenue, and give value to all stakeholders. In order to achieve these goals, SMEs should strive to be born globals. According to Lakew (2015) born global firms have a global orientation from the onset, contrary to Rostow's (1960) stages of economic growth theory. Empirical evidence from studies carried out by Bosma and Levie (2010) suggest that more than half the population sample of entrepreneurs in advanced economies, and around a third in developing countries, go into business with plans to attract foreign direct investment (FDI) from overseas. This should be the goal of AltX listed SMEs. Since, born global firms internationalise at a rapid pace – usually within three or less years between the initial domestic establishment of the firm and its first entry overseas, listed firms should be prepared to trail this path (Rennie, 1993; Todaro, 2003; Senik, 2010). Also, SMEs need to be typically innovative, high tech driven and niche market oriented, so that they can key into an accelerated internationalisation strategy (Gabrielsson, et al., 2008). Lastly, by taking advantage of global networks that are facilitated by a borderless marketplace, global out (re)(in) sourcing, as well as rising demand for quality products and services, listed SMEs can attain yield accretive growth.

## 2.4 TYPES OF ENTREPRENEURSHIP

Entrepreneurship studies have been in the forefront of academic and policy discourse for over four decades. In fact, this phenomenon is receiving considerable visibility and gravitating government support towards SMEs, because they are linked with job creation and sustainable economic growth. Due to the rapid development of this field of study, many researchers have been mandated to elucidate/coordinate the literature study on the key mechanisms that influence the entrepreneurial process. Consequently, this also necessitates the development of a comprehensive treatise that deals with the various kinds of entrepreneurship. Before now, most firms were motivated to do business due to their profit orientation, however, overtime, it has been observed that other factors can trigger entrepreneurs to set up businesses e.g. so as to engage in active community development. Since this study's main objective is to measure the impact that SME listing has on firm performance

and entrepreneurship in South Africa, it is absolutely important that the different forms of entrepreneurship are laid bare, so as to make informed decisions later on. Thus, this study classifies the various types of entrepreneurship into four, namely: the new order, Clarence Danhof classification, Arthur H. Cole classification, on the basis of ownership, and, on the basis of scale of enterprise.

### 2.4.1 THE NEW ORDER

Contemporary entrepreneurship study has evolved over time from its traditionalist's view. With the introduction of numerous research and industrial training programmes on entrepreneurship, it is evident that so many forms of entrepreneurship are being practiced and supported worldwide. Intertwined amongst these distinct forms of entrepreneurship exist various types of entrepreneurial organisations such as small businesses, scalable start-ups, large companies and social entrepreneurs (Dunning, 2010). Thus, the new order classification of entrepreneurship can be further sub-divided into the following groups:

1. **Corporate Entrepreneurship:** About two decades ago, this new concept of entrepreneurship literature gained prominence. According to Birkinshaw (2003) corporate entrepreneurship (CE) refers to the development of new business ideas and opportunities within large [formalised] and established corporations. Burns (2013) posit that CE is concerned with the ability of large organisations to explore commercial opportunities, thus in the process develop structural and strategic capability to innovate, and to manage actionable change. Listed SMEs on the JSE's AltX are typical illustrations of CE in South Africa. This advanced form of entrepreneurship is predominant in developed and transiting economies, and can be divided into the following four classes:
  - Corporate venturing: In this kind of CE, new business ventures are managed separately from the mainstream business, so that they can survive long enough to deliver value to the sponsoring company. This ensures that organisational arrangements gravitate in the same direction as new ventures, which are based on legal, regulatory and ethical boundaries (Chesbrough, 2002). The growth of Intel and BP can be attributed to corporate venturing, however, the collapse of Enron can be linked to the unbalanced application of this model in a well-structured organisation. Furthermore, the constant listing, promotion and delisting of SMEs on the AltX explain why insights on the paradox of CE are gaining prominence globally. Most listed

companies are now adopting the holding structure in order to sustain their varying interests in various markets.

- Intrapreneurship: Pinchot (1984) coined the term intrapreneurship, as a nuanced treatment for the problem of job losses in large corporations by enthusiastic employee entrepreneurs. This approach focuses on the individual employees who are 'dreamers who do' and have the propensity to act in an entrepreneurial way. Large MNCs such as Microsoft and Apple are examples of successful forms of intrapreneurship that became successful. Unlike typical large firms whose structure, direction and space put in place systems and structures that inhibit initiative, many forward-looking organisations like Facebook, Alibaba and Google encourages and supports this form of entrepreneurship. The implementation of B-BBEE transactions nationwide can easily foster black intrapreneurship and also lead to the development of SMEs. This model motivates creative company staffs to think practically and frees their individual initiative, as well as maximise their performance (Macrae, 1982).
- Entrepreneurial transformation: The concept of entrepreneurial transformation is premised on the assumption that large firms have to adapt to a dynamic business environment. Also, it is based on the notion that purpose, process and people define great companies. Studies carried out by Ghoshal and Bartlett (1997) finds that rapid technological advancements have rendered the traditional corporate organisations obsolete. Therefore, entrepreneurial transformation implies that structural transformations need to be adopted by large firms, in order to take advantage of their core capabilities. Furthermore, the individualised corporation needs to adapt to new norms by manipulating the firm's archetypal culture and organisation systems, hence in the process induce entrepreneurial behaviour. General Electric (GE), 3M and Kao Corporation are classic examples of firms that successfully implemented this form of entrepreneurship in their companies. Likewise, Gold Brands Investments, Ansys, 4Sight Holdings, Avior Capital Markets Holdings and Heriot REIT Limited have attempted to implement entrepreneurial transformation in their organisation following their listing on the JSE's AltX.
- Bringing the Market Inside: Foster and Kaplan (2001) use the seminal ideas of Joseph Schumpeter to explain the impact of

creative destruction on companies. They explain why companies that are built to last still underperform the market hence require transformation. Particularly, this type of corporate entrepreneurship operates at the firm level, but focuses more on the structural changes that can be made to encourage entrepreneurial behaviour. Also, the marketplace determines how large firms should manage their resource allocation and people management systems, and encourages the use of spin-offs and corporate venture capital operations. They propose that corporations can outperform capital markets, and thus maintain their leadership positions, if they can balance creative continuity and destructive change. For instance, Apple was able to move from the production of iMacs to manufacture iPhones. Likewise, Alaris Antennas was able to restructure into a holding structure, which led to its purchase of a controlling stake in COJOT, Finland, mWave USA and d.b.a Alaris USA, so as to bolster its antenna development business.

- 2. Family Entrepreneurship:** Although often ignored, family entrepreneurship (FE) is the oldest form of entrepreneurship in the world. Since family is the building blocks of the society, it is easier for family members to start a business together based on the trust that exist between them. FE occurs when a business is actively owned and/or managed by at least two members of the same family (Deakins and Freel, 2012). Similarly, FE can easily continue after the demise of any member of the family due to the passage of wealth through inheritance. Many developing and developed country's growth can be traced to this basic social unit. For instance, multi-generational entrepreneur families like the Laurens own fashion brands Polo Ralph Lauren and Ralph Lauren, while their child Dylan Lauren owns Dylan's Candy Bar. The Trump organisation epitomises this demeanour too. Similarly, William George Wearne established AltX listed W.G. Wearne Group of Companies in 1910 in order to supply materials to the building and construction industry, today the company is being managed by his scion John Wearne. Likewise, the rise of the Asian Tigers especially China can be traced to the growth of this basic social unit form of business. Further, family ownership and family involvement in firm ownership and management is a significant driver of sustainable economic growth and development. Expectedly, the extant literature in FE has come up with new perspectives that are gaining greater visibility. For instance, the phenomenon known as copreneurship is now the focus of new entrepreneurship studies.

- Copreneurship: This is a form of entrepreneurship that is carried out by entrepreneurial couples. In fact, business by couples is a special form of FE where couples in business are committed to helping each other succeed in business and life. However, the major problem with this kind of entrepreneurship is that when married or unmarried couples split, the business nosedives. Here, friendship comes first, and business is second.

**3. Strategic Entrepreneurship:** Contemporary studies in strategic management and entrepreneurship in the 21<sup>st</sup> century led to the development of this field of study. According to Ireland, Hitt and Sirmon (2003) strategic entrepreneurship (SE) involves simultaneous opportunity seeking and advantage seeking behaviours that results in superior firm performance. This is due to superior resource acquisition and competitive positioning (Klein, Barney and Foss, 2013). In order for firms to gain long-term competitive advantage, firms need to marshal the idiosyncrasies of small firm innovativeness with large firm robust iterative wealth creation capability. Besides, the entrepreneurial mind-set, culture and leadership can be entwined with strategic management resources profitably. Sarkissian (2017) points out that in globalised and dynamic markets, competitors rapidly replicate innovation leading to transient competitive advantage positioning. In order to ensure survival and growth, firms should put in place an ambidextrous management that can carry out frequent environmental scanning and recalibration. This why incubatorship has become essential in the modern business environment.

- Incubatorship: Due to the strategic importance of the entrepreneurial process in reducing the scourge of poverty, unemployment and stagnation, SMEs are now being mentored to grow. This ensures that new businesses do not fail. The DTI has endorsed the AltX with a 30-year commitment which include SME assistance with finance marketing as well as the provision of subsidy for the induction programme for all AltX directors. Furthermore, collocating small firms ensure that these businesses learn from each other, and also process financial facilities jointly.

**4. Rural Entrepreneurship:** According to Kumar (2012) rural entrepreneurship (RE) is the kind of entrepreneurial activity that occurs in the rural sector of the economy, when industrial establishments and business units are located in remote areas. Consequently, most of the rural dwellers that comprise a significant percentage of the population do not have to migrate to urban centres in search of greener pastures. It

is expected that RE would raise the standard of living in these places, and lead to the employment of primitive and isolated rural dwellers. Many research findings reveal that rural businesses are less innovative than those of urban areas. The Aspen Institute's (2011) Fund for Innovation, Effectiveness, Learning and Dissemination (FIELD) work exploration into various aspects of the U.S. informal economy observes that entrepreneurs engaging in legal, but unregulated activities—led FIELD to take an in-depth look at RE. It is expected that SMEs would leverage from significant new investments, and stimulate state and national interest in RE policies and strategies. SMEs listed on the AltX can use funds raised to promote black economic empowerment especially for junior mining companies operating very remote areas. It has been observed that most SMEs in rural areas prefer to operate in agro and forest-based industries, as well as the textile industry, engineering and services, and mineral based industries where less electricity power is utilised with fixed capital investment (Kumar, 2012). RE makes rural areas attractive, however, rural entrepreneurs need to be connected to regional, national and international markets to succeed, since rural areas are less populated and have poorly developed markets.

- 5. Social Entrepreneurship:** The term social entrepreneur and social entrepreneurship was coined by Howard R. Bowen in 1953 in his book 'Social Responsibilities of the Businessman' – SRB (Bowen, 1953). According to the Schwab Foundation for Social Entrepreneurship (2017) social entrepreneurship (SE) is the application of practical, innovative and sustainable approaches to benefit society in general, with an emphasis on those who are marginalised and poor. Consequently, SE turns social and environmental problems confronting societies into opportunities that can be exploited to create social change. It can be in the form of social business ventures, hybrid business ventures and leveraged business ventures (London, 2016). Social entrepreneurs use innovative and business savvy skills to make the world a better place, coalescing a traditional business model with a pressing social mission. For instance, the JSE's AltX listed Mine Restoration Investments Limited focuses on the abatement of environmental impacts of the mining industry as its social cause, while Interwaste Holdings Limited focuses on environmentally conscious waste management in South Africa and Mozambique.

Bill Drayton's Ashoka foundation, Noble laureate Muhammad Yunus Grameen microfinance bank, TOMS, Water, Seventh Generation, Better World Books, Comilla Cooperative Project, Orangi Pilot Project, SEKEM, Borneo Orangutan Survival Foundation, and Barefoot College are

notable examples of SE. As earlier stated, in South Africa, AltX-listed Mine Restoration Investments Limited is an example of SE that uses proprietary technology to purify waters polluted by acid mine drainages. This concept has been criticised for not being sustainable in the long run, because SE is associated with philanthropism and not-for-profit firms. The TED talk series continues to project this form of entrepreneurship against all odds citing the likes of Elon Musk's Tesla Motors, SolarCity, and SpaceX of pushing the limits of human ingenuity. According to Stephan, Uhlander and Stride (2015) institutional voids, institutional support and institutional configurations facilitate SE due to government activism, informal cognitive and normative cultural values. The US-based Skoll Foundation, the UK government's Big Society, and the European Commission's Social Business Initiative offers extensive instances of public-private initiatives in SE.

- 6. GEM Classification:** According to the Global Entrepreneurship Monitor (2017: 15) entrepreneurship activity can be measured by; The life cycle of entrepreneurial ventures (i.e. nascent, new business, established business, discontinuation); According to impact (i.e. high growth, innovation, internationalisation); By type (Total Early-stage Entrepreneurship Activity (TEA), Social Entrepreneurship Activity (SEA), Employee Entrepreneurship Activity (EEA)).

The GEM classification by type outlines the kind of contemporary entrepreneurship that is predominant in almost all countries of the world, such as:

- ✚ Total Early-stage Entrepreneurial Activity – TEA: The TEA rate comprises of the percentage of the adult population between the ages of 18 and 64 years who are in the process of starting a business (a nascent entrepreneur) or owner-manager of a new business which is less than 42 months old (Amorós, Bosma and Levie, 2013). This scale can be amplified by information related to *motivation* (opportunity vs. necessity), *inclusiveness* (gender, age), *impact* (business growth in terms of expected job creation, innovation, internationalisation) and *industry* (sectors).
- ✚ Entrepreneurial Employee Activity – EEA: It is defined as the percentage of the adult population aged between 18 and 64 years who as employees have been involved in entrepreneurial activities (Amorós and Bosma, 2014) such as developing or launching new goods or services, or setting up a new business unit, a new establishment or subsidiary.



- ✚ Social Entrepreneurial Activity – SEA: This type of entrepreneurship covers the percentage of the adult population aged between 18 and 64 years who are engaged in early-stage entrepreneurial activities with a social goal.

Furthermore, it is important to note that the GEM report is a 21-year research project that has been constantly evolving, due to the dynamic nature and ecosystem of this complex phenomenon.

#### **2.4.2 CLARENCE DANHOF CLASSIFICATION**

Harvard trained Agriculturist Clarence Danhof carried out a study in 1949 titled 'Observations of Entrepreneurship in Agriculture and the Entrepreneurs' where he observed the differences in entrepreneurial orientation. Danhof (1949) finds that at the initial stage of economic development entrepreneurs have less initiative and drive, but as the economy develops, they become more innovating and enthusiastic. Similarly, he classified entrepreneurs into four types, as follows: Innovating entrepreneurs, imitative entrepreneurs, fabian entrepreneurs and drone entrepreneurs.

- 1) Innovating entrepreneurs: This kind of entrepreneurship requires the assembling and synthesis of information that are harnessed to form new methods of production (Dunning, 2010). Innovating entrepreneurs also use their expertise to link goods and services directly to new markets. The AltX offers SMEs an opportunity to tap into its financial war-chest, and explore innovative processes that will turn them into high-growth firms.
- 2) Imitative entrepreneurs: These are adoptive entrepreneurs that replicate successful innovations that are inaugurated by innovating entrepreneurs (Deakins and Freel, 2012). Although intellectual property rights advocates discourage the adoption of this model of entrepreneurship, it helped to turnaround the economy of the Asian Tiger nations such as China and Taiwan. For imitative entrepreneurship to work R&D laboratories need to be either situated in advanced nations or skilled expatriates should be recruited from overseas to replicate these innovations as technology transfer.
- 3) Fabian entrepreneurs: As opposed to the widely held notion that entrepreneurs are risk takers, fabian entrepreneurs are both timid and cautious. These types of entrepreneurs are ambidextrous to innovation and imitation (Shane and Nicolaou, 2013; Amorós and Bosma, 2014). Hence, they exercise great caution and scepticism in undertaking new business decisions. As such only the viable alternative option is implemented at all times.

- 4) Drone entrepreneurs: These are serial innovators whose entrepreneurialism is restricted to just a few innovations, even though there is a possibility of a risk of reduced returns (Porter, 2008). Consequently, drone entrepreneurs refuse to explore opportunities that alter the system of production, even if it might offer a marginally return on profit relative to competitors. This means that in the long run drone entrepreneurs become laggards, conservative and stick to traditional business processes. For SMEs to survive in a highly globalised and dynamic market they need to consistently innovate in order to guarantee their long-term sustainability.

### **2.4.3 ARTHUR H. COLE CLASSIFICATION**

Harvard trained Professor, Arthur H. Cole in 1959 classified entrepreneurs into three types based on the findings of his book titled 'Business Enterprise in Its Social Setting' (Cole, 1959). His categorisation of entrepreneurs is as follows: empirical entrepreneurs; rational entrepreneurs; and, cognitive entrepreneurs.

- A. Empirical entrepreneurs: This kind of entrepreneurs do not innovate, thus based on experience follows the principle of rule of thumb.
- B. Rational entrepreneur: A rational entrepreneur introduces revolutionary ideas that keep his/her business in tandem with current market and economic conditions.
- C. Cognitive entrepreneurs: This kind of entrepreneurs consult with experts in order to create changes that are revolutionary, thus leads to a complete paradigm shift from existing business structure.

### **2.4.4 CLASSIFICATION ON THE BASIS OF OWNERSHIP**

Contemporary entrepreneurship literature have observed and reviewed the rising phenomena that is known as public and private entrepreneurship, which is described below:

- 1) Private entrepreneurship: To many entrepreneurship scholars, private entrepreneurship is the real ideal form of entrepreneurship, because entrepreneurs are profit oriented and motivated to take risks for monetary rewards (Burns, 2013). Hence, this form of entrepreneurship is innovation and necessity driven, and also capitalises on the capabilities and competitive advantage of companies. On a global scale, this form of entrepreneurship is predominant in developed countries.
- 2) Public entrepreneurship: Recent entrepreneurship literature has observed a new trend in entrepreneurship called public

entrepreneurship (Mazzucato, 2015). This occurs when individuals collaborate with either governments or multilateral organisations to create enterprises, which benefits the society. Therefore, it means that this form of entrepreneurship combines the attributes of both public and private entrepreneurship in pursuit of social objectives. Some analysts link this type of enterprise to political and social entrepreneurship. Besides, the government provides either financial or incubation support to this kind of enterprise, in order to enable them to transit from start-up to maturity. Furthermore, this form of entrepreneurship is common in underdeveloped countries where government takes strategic initiative to share enterprises, primarily due to institutional voids (Stephan, Uhlander and Stride, 2015). Contrary to popular capitalist tendencies that support free enterprise, LDC governments believe that with appropriate institutional support and configurations entrepreneurial ventures will thrive. Besides, it is anticipated that public entrepreneurs will either sell their products and services to government or directly to citizens/residents in the society.

#### **2.4.5 CLASSIFICATION ON THE BASIS OF SCALE OF ENTERPRISE**

Entrepreneurship development is at the forefront of macroeconomic research, because of its contribution to job creation and national growth. This has necessitated the classification of entrepreneurship on the basis of the size of an enterprise, which are as follows:

- I. Small scale entrepreneur: In underdeveloped and developing countries small scale entrepreneurship is predominant. This is obviously because of the lack of innovative capabilities in these regions of the world (Deakins and Freel, 2012; Amorós and Bosma, 2014; Bosma et al. 2020). Moreover, the resources of scale enterprises are limited, hence it becomes almost impossible to initiate large scale production that requires huge technological leaps. Due to this conspicuous characteristic of entrepreneurship in Africa, which are mainly necessity-driven, with few opportunity-driven enterprises, this research focus on the contribution that AltX-listing has on SMEs in South Africa. Share listing is expected to contribute to the earnings potential of firms and enable them to expand either organically or via acquisitions.
- II. Large scale entrepreneur: Unlike small scale entrepreneurship, large scale entrepreneurship involves the utilisation of revolutionary ideas that are replicatable firm-wide. This guarantees sustainable high yielding profits. Consequently, these firms use their huge financial capacity to develop new technologies, and manpower to undertake entrepreneurial ventures (Burns, 2013). Large scale entrepreneurship

is predominant in developed countries in Europe, America, Australia, and are growing iteratively in transiting economies across Asia. Listing would assist SMEs to monetise their investment, fund acquisitions and facilitate B-BBEE deals. This would also trigger spill overs in the economy, which will increase income and reduce the level of poverty, as well as lead to equitable redistribution of wealth in the country. Obviously, within a short-term period of time AltX listed SMEs shall metamorphose into large firms that would eventually list on the JSE's Main Board.

## **2.5 THE NATURE AND CHARACTERISTICS OF ENTREPRENEURSHIP**

Entrepreneurship is multi-dimensional concept that involves critical thinking, risk taking and the perseverance to build a business idea from conception into maturity. In order to better understand this concept, it is important to state categorically the nature and characteristics of entrepreneurship, as follows:

- (1) Creation of an enterprise: The most important nature of entrepreneurship is the creation and operation of an enterprise (Burns, 2010). In fact, the main nature of entrepreneurship is that it is iterative and inspires other potential entrepreneurs. Furthermore, this process of business birth rate is very competitive due to the enormous potential of the creative disruption of technology, hence it can also lead to business death rates. This explains the reason why firms list on the AltX, and at the same time registered firms are being suspended and delisted, while some gain promotion to the JSE's Main Board.
- (2) Organisation function: Another important nature of entrepreneurship is that it harnesses the various factors of production together for economic exploitation (Acs, 2010; Birchall, 2015).
- (3) Innovation: Schumpeterian assumption that the creative gale of destruction enhances the entrepreneurial process has been at the centre of entrepreneurship discourse (Schumpeter, 2013). This puts into perspective the significance of innovation as an automatic, spontaneous and creative response to changes in the marketplace. Likewise, innovation causes the creation of new products and services, and leads to higher sales margin (Drucker, 2007). In contemporary entrepreneurship literature innovation is viewed as the creator of markets, and leads to economic growth and development in the long run.
- (4) Risk bearing capacity: The entrepreneur is a risk taker who assumes the responsibility to bear risks for either profit or philanthropy in an uncertain marketplace (Lakew, 2015). Although the JSE's AltX is a junior bourse

when compared to the Main Board, the high rate of uncertainty on the exchange makes it to be more profitable overtime for SMEs that take advantage of available business opportunities.

- (5) Managerial and leadership function: The nature of entrepreneurship causes entrepreneurs to take up leadership and managerial responsibilities of their companies (Mazzucato, 2015). Furthermore, the entrepreneur controls and coordinates the manpower resource, as well as give direction to his/her business. This will definitely enhance the leadership potential of AltX listed firms in South Africa.
- (6) Gap filling function: Entrepreneurship is a vigorous application of an entrepreneur's energy to fill the gap between the needs of the society in relation to available products and services (Hind and Steyn, 2015). The catchphrase of many entrepreneurs is 'create it, they will buy it'. Due to the huge gaps that exist in the South African market, it is expected that the increased listing of SMEs on the JSE's AltX will allow them to raise enough capital from local, international, institutional and corporate investors, which would enable these firms to easily expand their operations within and outside the country. This will make entrepreneurship more attractive as a career choice, as well as assist in reducing the high prevalence of unemployment in South Africa.

From the details above, it can be deduced that the nature of entrepreneurship is that it motivates entrepreneurs to spot opportunities, and exploit both tangible and intangible resources in order to create new ventures. The more media attention is being given to this process, the more attractive this career choice would be to the adult population. Although the ANC government have made several statements in support of entrepreneurship, many people are ignorant about the actual steps to take when it comes to actualising their business dreams. One way to achieve this goal is for SMEs to list on the JSE's AltX, a path that can easily trigger their leap towards becoming bigger, larger and international within a remarkably short period of time. In essence, entrepreneurs help to diversify the productive capacity of nations, act as suppliers for large firms, and assist in dismantling monopolies through competitive pricing and its timely supply of goods and services. Ultimately, the problem of wealth redistribution can be easily solved by citizens engaging in entrepreneurship, since labour will be employed, and those employed can have incomes to cater for their households, in the end leading to equitable wealth redistribution in the country.

**Table 2.2 Entrepreneurial domain vs. Administrative domain**

Entrepreneurial Domain		Key Business Dimension		Administrative Domain
Pressures toward this side				Pressures toward this side
Diminishing opportunity streams				Social contracts Performance measurements
Rapidly changing: Technology	Driven by perception of opportunity	Strategic orientation	Driven by resources currently controlled	Social contract measurement criteria Planning systems and cycle
Consumer electronics				Acknowledgement of multiple constituencies
Social values				Negotiation of strategy
Political rules				Risk reduction Management of fit
Action orientation	Revolutionary with short duration	Commitment to opportunity	Evolutionary with long duration	Personal risk reduction Incentive compensation
Short decision windows				Managerial turnover Capital allocation systems
Risk management				Formal planning systems
Limited decision constituencies				
Lack of predictable resource needs				Power, status and financial rewards Coordination
Lack of long-term control	Multi-staged with minimal exposure at each stage	Commitment of resources	Single-staged with complete commitment upon decision	Efficiency measures Inertia and cost of change Industry structure
Social need for more opportunity per resource limit				
International pressure for more efficient resource use				
Increased resource life compared to need	Episodic use or rent of required resources	Control of resources	Ownership or employment of required resources	
Risk of obsolescence				
Risk inherent in any new venture				
Inflexibility of permanent commitment to resources				
Coordination of key non-controlled resources				Need for clearly defined authority and responsibility Organisational culture Rewards systems Management theory
Challenge to legitimacy of owners' control	Flat with multiple informal networks	Management structure	Formalised hierarchy	
Employees' desire for independence				

**Source: Stevenson and Sahlman, 1986**

From Table 2.2 above, it can be observed that the entrepreneurial domain can be differentiated from the administrative (i.e. managerial) domain based on five key business dimensions. These key business dimensions are as follows: Strategic orientation; Commitment to opportunity; Commitment to resources; Control of resources; and Management structure. According to Hisrich, Peters and Shepherd (2013) the strategic orientation is driven by the perception of opportunity in the entrepreneurial domain, while in the administrative domain it

is premised on resource control. Furthermore, the commitment to opportunity is absolute and revolutionary in the entrepreneurial domain, while in the administrative domain it is slow and bureaucratic. This explains why many persons that are willing to take on entrepreneurship as career choice cannot actually fit into this domain. Hence, persons with high locus of control can easily run their own business due to their belief that they excel in commerce instead of working for government. And are willing to reap profits from their ventures, instead of receiving salaries as exemplified in the administrative domain.

Similarly, in the entrepreneurial domain the commitment of resources is multi-stage with incremental exposure to risks, whereas the administrative domain commits the total resources needed for projects. Also, the control of resources in the entrepreneurial domain is episodic and limited by the availability of funds, while in the administrative domain resource control is total and reward induced. This is why SME listing on the JSE's AltX is being promoted, so that small businesses can raise enough capital to further the production of goods and services. In addition, since the management structures of entrepreneurial firms are flat with multiple informal networks, while in the administrative domain the management structure is formalised, bureaucratic and hierarchical in nature, decisions can be made promptly.

## **2.6 THE ROLE OF ENTREPRENEURSHIP**

Undoubtedly, the lack of bureaucracy, risk acceptance, rapid decision-making and absolute autonomy makes entrepreneurship a viable career option. Unlike, the administrative domain that concentrates on government/company reward structures as a motivating factor, the entrepreneurial domain capitalises on opportunities, as well as the need for self-sufficiency. Interestingly, the desire of employees of entrepreneurs to be financially secure also ignites entrepreneurial tendencies in them. More so, due to the fear of job losses managers in large firms are encouraged to become intrapreneurs in order to take advantage of the performance linked reward system for profitable initiatives by employees. Evidently, entrepreneurship provides the framework for the economic renaissance of poor countries, and also supports the economies of developed nations. According to Oparah (2016) entrepreneurship is the business of wealth creation which benefits all nations. Consequently, countries with the least enterprising spirit are amongst the poorest in the world, and experts attribute the lack of enterprise as the main cause of poverty in LDCs. This warrants more research in this area, so as to determine the impact that entrepreneurship has on national productivity. Thus, the following are the role entrepreneurship plays in the economy:

- I. Job creation: Entrepreneurs builds firms that create jobs, hence solve the problem of unemployment. As more manpower is required to

develop products and services, many idle human and material resources are employed to create value for consumers. Hakobyan (2016) points out that in the United States small businesses have generated 64 per cent of the new jobs in the previous decade. This is because new businesses challenge the existing industry and create market disruptions that consistently cause new job openings. In South Africa SMMEs employ about 80 per cent of the total work force (Smulders, 2006). And, also have the capacity to generate more jobs that can further reduce by half the current unemployment rate of about 27 per cent.

- II. Manpower training: Most entrepreneurs have limited resources so they cannot afford highly skilled manpower whose duties can either be automated or manned by in-house company trained staff. Thus, the need to train and retrain many company's staff becomes imminent in order to produce innovative and/or affordable products and services (Oparah, 2016). In the long run this would increase the number of skilled workers in a country. For instance, the German and Chinese labour market is made up of highly specialised technical staffs whose skill sets are tailored towards a particular industry or sector. Additionally, the presence of SME incubators and industrial clusters helps to buffer the managerial acumen of entrepreneurs and position them to occupy a dominant position in the economy (Deakins and Freel, 2012). Likewise, successful entrepreneurs can mentor and educate the public on the importance of owning a business, instead of depending on governments to create non-existent jobs. Thus, they assist in building latent entrepreneurs and positively impact on the economy. The JSE's AltX contributes to manpower training via its mandatory directors' induction training, while listed SMEs contribute to manpower training via B-BBEE structured training for black workers.
- III. Innovative change agents: An entrepreneur is a visionary that exploits opportunities and market trends before they become glaring or obsolete. Entrepreneurs are also change agents that use their skills to develop new products and markets (Evoma, 2017). For instance, Steve Jobs was able to create Apple Macintosh, iPads, iPhones and MacBooks without actually having the skill set to manufacture them. However, he used his ingenuity to design and empower engineers to bring his creative capacity into reality. Sir Richard Branson founder of Virgin Atlantic/Galactic/Megastores and Elon Musk owner of Tesla/SolarCity/SpaceX/Hyperloop/PayPal have been able to use their innovativeness to alter the airline industry, space industry, financial sector and transport sector. Their vision to change the world and humanity will reduce global warming and make humans multiplanetary.



Furthermore, the creation of trends and new markets and products by entrepreneurs lead to both industrial and economic transformation. Tasks that could take years to complete are now being automated at a fraction of the cost for the betterment of mankind. AltX listed Workforce Holdings Limited and Etion Limited have used their information and communication and technology (ICT) capability to innovatively diversify their product offerings overtime.

- IV. Wealth creation, sharing and redistribution: According to Oparah (2016) entrepreneurship stimulates the equitable redistribution of wealth, income and even political power, by supplying their end products and services to areas of need. Moreover, the employees of entrepreneurial ventures get paid for their services, and the balance after defraying costs of running the business becomes profit for the entrepreneur. Hence, the entrepreneurial process creates wealth for the entrepreneur, investors and staff (Deakins and Freel, 2012). Likewise, entrepreneurs attract capital (i.e. debt and equity) from investors, lenders and the public, which is later invested in running and expanding the business. By mobilising public wealth and allowing people to benefit from the success of entrepreneurs abundant wealth is created and redistributed across the country. This can assist in reducing the problem of uneven distribution of income in South Africa.
- V. Balancing regional growth: Entrepreneurship occurs due to market disequilibrium – because the needs of the society cannot be matched by adequate supply of goods and services (Hakobyan, 2016). Hence, the opening of new businesses and industrial facilities help with regional development, especially when businesses are located in less developed and remote areas. The resulting growth in these areas leads to infrastructure improvements such as good roads, stable electricity, water supply, schools, hospitals, staff housing and shopping malls. Town councils could also lobby the government to locate rail links, airports, as well as other public and private services that would not otherwise be available in such vicinities. According to Evoma (2017) every new business that locates in remote areas will create both direct and indirect jobs, and subsequently, help to build regional economies.
- VI. Improve standards of living: The exploitation of factors of production by entrepreneurs assists in the development of products and services that add to the national income, national product and per capita income of the country (Global Entrepreneurship Monitor, 2017). This plays a key role in improving the standard of living of the entire country. By creating jobs, reducing price, and inventing new products and services,

entrepreneurs' help to improve the quality of life of their employees, customers, and other stakeholders in the community.

- VII. Exports: As entrepreneurial ventures grow over time, they expand into foreign markets (Evoma, 2017). This provides access to larger markets in other countries, as well as the latest cutting-edge technologies and processes being used in more developed foreign markets. Furthermore, exporting helps entrepreneurs to diversify their businesses, in order to guarantee a stable revenue base and act as a buffer during periods of economic downturns in the home market. Since exports are paid for in hard currency, foreign inflows could trigger a favourable balance of payment, and thus strengthen the local currency. Almost, half of the JSE's AltX listed firms sell their products to international markets, which helps to better the balance of payment of South Africa.
- VIII. Corporate social development: Since economic development does not in all instances translate into community development, most successful entrepreneurs are compelled to invest in sustainable social projects, as good corporate citizens of their host community (JSE, 2019). It is well documented in the annual financial statements of almost all AltX listed companies that they invest in corporate social responsibility (CSR) projects (Accénuate, 2015; Alaris Holdings, 2016; Ansys, 2016). These community development projects are mostly in infrastructure, education and training, healthcare, sports and other public services. The recent implementation of the B-BBEE scorecard for companies, although not mandatory for SMEs have motivated many company boards to use a significant part of their profit to finance community development projects (EY, 2013). Likewise, many AltX listed companies are now training and retraining black staffs, and offering shares to their host communities, as well as promoting black and female managers to their company boards. Thus, some JSE's AltX listed firms, in their own little ways promote racial and economic justice nationwide.

## **2.7 THE TEA RATE IN SOUTH AFRICA**

Herrington, Kew and Mwanga (2017) observed that despite unemployment rising to an all-time high of 27.6 per cent and youth unemployment rising to about 65 per cent, South Africa's TEA rate declined to about 6.9 per cent in 2016. The TEA rate of 10.96 and 10.77 for the 2017 and 2019 respective period although higher than expected is still far below the average TEA rate of about 20.0 for African countries (GEM, 2020). This persistent low level of entrepreneurial activity relative to other countries can be linked to financial constraints, uncoordinated government policy, low levels of education and training, as well as rising labour costs. Clearly, the Entrepreneurial Framework Conditions (EFCs) for South Africa has strong influence on the TEA rate

(Bosma et al. 2020). And political sentiments and instability might have an abnormal effect on this ranking too. However, South Africa’s surge in opportunity-driven entrepreneurship implies that productive growth is attainable, in contrast to survivalist necessity-driven entrepreneurship. Hence, the creation of innovative and sustainable businesses is expected to drive job-linked growth to an unprecedented level (Global Entrepreneurship Monitor, 2017). Furthermore, innovation can spark business sophistication which can make nascent or new ventures or established ventures to grow rapidly and internationalise, can also lead to business discontinuation due to the impact of the creative destruction process. Fortunately, the strong international orientation of entrepreneurs in the country means that increased export sales could improve South Africa’s balance of payment.

Many industry pundits and researchers are of the view that the declining appetite for entrepreneurship can be traced to the impact of unstable macroeconomic fundamentals such as the rising public debt, persistent inflation, weakening rand and other fiscal vulnerabilities. Furthermore, political wrangling is weakening the confidence level of entrepreneurs on the economy, due to the unpredictability of government’s policy direction/actions in the medium to long-term periods. Miller and Kim (2017) points out that South Africa is performing below its potential due to persistent uncertainties surrounding key government policies, which are impediments to private investment. More so, structural and institutional barriers caused by government justifiable intervention in the marketplace are crowding out private-sector growth. Similarly, most SMEs view the implementation of the B-BBEE codes as a massive burden on their meagre resources, hence, discourages potential entrepreneurs from participating in some sectors of the economy. Expectedly, the JSE’s AltX can use its funding capacity to lure SMEs to register on the lower bourse where opportunity-based and improvement-driven venturing can be promoted.

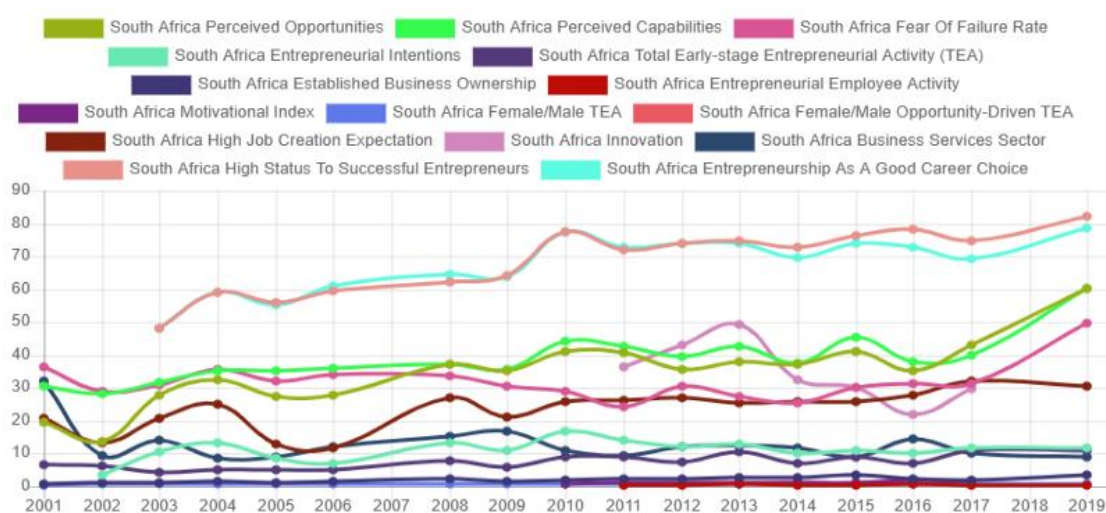


Figure 2.7: GEM Chart (Source: GEM, 2020)

The legend above in Figure 2.7 shows that the two most influential indicators, which motivate entrepreneurs in South Africa, are the high status that is given to successful entrepreneurs, and the fact that entrepreneurship is viewed as a good career choice (Herrington, Kew and Mwanga, 2017). Since societal attitudes and perceptions are important aspects of creating an entrepreneurial culture, this trend needs to be sustained through intense media coverage. The 2010 FIFA World Cup hosted by South Africa encouraged entrepreneurial tendencies nationwide and also increased the TEA rate. However, after the soccer mundial the TEA rate fell, but is now rising steadily, although it is below the regional average and that of efficiency-driven economies. In terms of gender equity, South Africa's female/male TEA ratio of 0.74 per cent in 2016 is ranked 22<sup>nd</sup> out of 65 economies. This trend is inspired by a narrowing skewed balance and disposition by females towards entrepreneurship. Likewise, the job creation expectation rate is ranked among the top twenty in the world. This is because the form of entrepreneurship that is prevalent in South Africa is opportunity-driven, export orientated and uses high technology (Bosma et al. 2020). The JSE's AltX will definitely assist SMEs to improve the national statistics.

Furthermore, there is need to shore up the established business ownership rate, so that the entrepreneurial intentions rate can be improved as well. This drives attention to another major problem affecting entrepreneurs in South Africa, which is the fear of failure. Expectedly, this factor is impacted by the national culture of conservatism and risk avoidance (Global Entrepreneurship Monitor, 2017). Since entrepreneurship is a risky endeavour, failure should be viewed as part of the process to initiate entrepreneurial success, else, very few individuals would venture into an entrepreneurial journey. Founders/Owners of bankrupt, liquidated or failed businesses should not be blacklisted or shut out of the financial ecosystem. According to Herrington, Kew and Mwanga (2017) lack of access to finance resulted in 50 per cent of entrepreneurs discontinuing their businesses. Consequently, many SMEs have listed (or are considering listing) on the JSE's AltX because of the potential funding opportunities it offers to businesses. Likewise, in order to boost the TEA rate, there is also a need to reduce the impact of regulation on businesses. This lofty objective can be achieved by streamlining unnecessary bureaucratic burdens, as well as burdensome labour regulations, which have been observed as the key constraints for entrepreneurial ventures (Amorós and Bosma, 2014). Besides, the government through a simplified and standardised tendering process should support market openness across both the public and private sectors of the economy (Deakins and Freel, 2012). Issues like the highly controversial outburst that traces government inefficiency and ineffectiveness to state capture should be investigated and prevented, before they get to the public domain. So that people do not get discouraged, when they intend to begin a new business or even close well-run businesses (like Bell Pottinger) that currently support the economy.

Meanwhile, there is need to support entrepreneurship education, so that the chances of setting up successful entrepreneurial ventures can be significantly improved (Xavier-Oliveira et al. 2015). Policies such as B-BBEE that have been

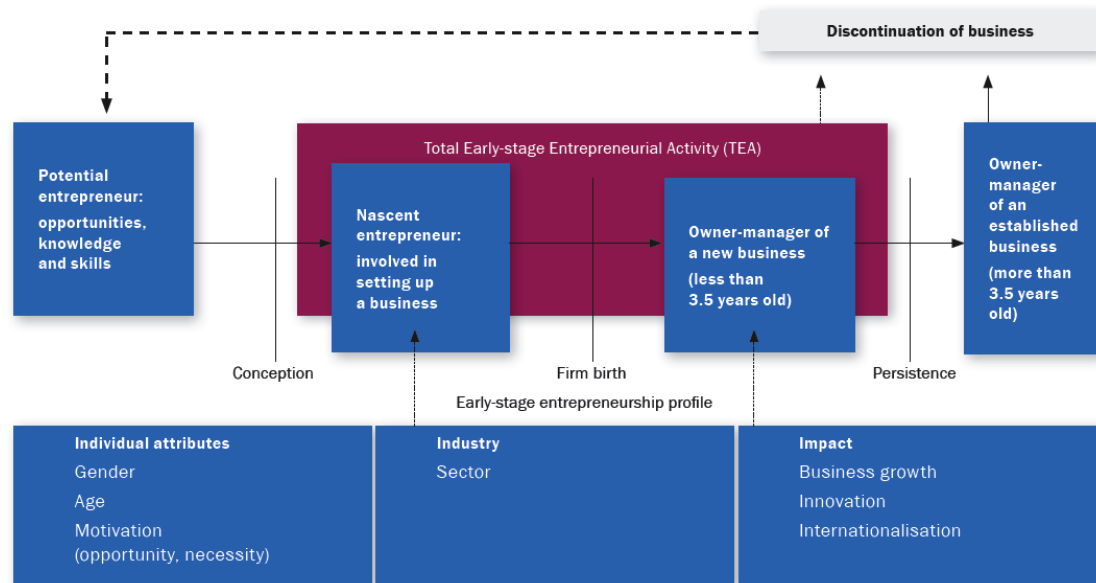
critically acclaimed should be implemented strategically, so that highly talented thinkers and innovators like Elon Musk are not lost through brain drain to advanced economies. Furthermore, mentorship, incubators and business support should be provided for entrepreneurs notwithstanding their race, in order to support business continuity in the long run (World Bank, 2011). More so, business clusters and hubs should be established in technically deficient remote areas, where start-ups can be assisted in a more protected and supportive environment (Herrington, Kew and Mwanga, 2017). Thus, with an ensuing favourable environment, the TEA rate of South Africa can be positively boosted. This will also assist the country to yield the desirable effects of entrepreneurship such as employment generation, poverty reduction and assist in equitable redistribution of wealth in the economy. All things being equal, higher TEA rates would translate into more SME listings on the JSE's AltX.

## **2.8 THE ENTREPRENEURIAL ECOSYSTEM IN SOUTH AFRICA**

Numerous studies have revealed that South Africa's level of entrepreneurial activity is considerably low when compared to the average level in Sub Saharan Africa and other efficiency-driven economies. Worse still, unemployment is at its peak at 40 per cent (if expanded to include those that have stopped seeking for jobs). This precarious situation therefore creates spaces for entrepreneurship to thrive in the country (Global Entrepreneurship Monitor, 2017). However, only 23.6 per cent of TEA activity in 2016 was necessity-driven, while 74.4 per cent of TEA activity was opportunity-driven. The GEM's conceptual framework was therefore designed to depict the multifaceted nature of entrepreneurship, which is at the cross-section between individual behaviours and the socio-cultural, political and economic context of various nations (Herrington, Kew and Mwanga, 2017). National framework conditions when intertwined with entrepreneurial framework conditions can trigger socio-economic development when new jobs and value-adding activities are being localised (Bosma et al. 2020). It is anticipated that government intervention programmes in entrepreneurship could help to boost the level of entrepreneurship in the country. In fact, it is projected that the more entrepreneur's setup businesses across the nation, the more likely that jobs and realistic economic growth are accumulated by such economies. This explains why there can be different motivating factors for SMEs to list their businesses on the JSE's AltX.

The GEM study as illustrated in Figure 2.8 offers a broad view of entrepreneurship across the globe, based on social values toward entrepreneurship, individual attributes and entrepreneurship activity. In order to accurately measure the factors that influence entrepreneurship, the GEM study uses national research teams to collect primary data. These in-depth opinions of the entrepreneurial ecosystem are obtained through an adult population survey (APS), and national expert survey (NES). According to Herrington, Kew and Mwanga (2017: 15) "...the GEM conceptual framework recognises that entrepreneurship is part of a complex feedback system, and makes explicit the relationships between social values, personal attributes and various form of

entrepreneurial activity”. Consequently, this causes entrepreneurs to target a particular sector, from business conception to firm birth and then to maturity when SMEs founders/owners persist with vigorous activities, so that their businesses does not close.



**Figure 2.8: GEM Conceptual Framework (Source: GEM, 2017)**

According to SEDA (2016b), in South Africa, most entrepreneurs are interested in the trade and accommodation sector, manufacturing sector, construction sector, and, finance and business services sector. Also, the community development sector, transport and communication, agriculture, electricity, gas and water sectors, as well as the mining sector of the economy have started picking up gradually too. However, since the JSE’s AltX is dominated by the financial services sector, whose record of business discontinuation is also higher due to harsher barriers to entry in this sector, there is room for improvement. The mining and steel sector, and then the real estate investment and services sector, mobile telecommunications and technology sector, and the general industrials closely follow this sector in terms of impact. Interestingly, the thriving travel and leisure sector, pharmaceuticals and biotechnology sector, food, renewable energy sector, construction and materials sector and the media trail the remaining vibrant sectors of the economy. Consequently, it is expected that increased levels of entrepreneurial participation would lead to greater levels of innovation, business sophistication, firm listing, internationalisation and business growth in South Africa.

## 2.9 CHAPTER SUMMARY

This chapter has reviewed in detail literature pertaining to the concept of entrepreneurship, and have also identified the various entrepreneurship schools of thought. First, the chapter begins with a brief history of

entrepreneurship, and subsequently, carries out an examination of the various entrepreneurship schools of thought without which the phenomenon being understudied will not be thoroughly understood. Furthermore, the argument presented outlines each perspective and provides evidence that is associated with each school's approach. It is worthy to note that the objective of the literature study was to provide an overview of the theories of entrepreneurship, and to discuss how an individual's entrepreneurial personality, as well as the prevailing socio-cultural factors affects the entrepreneurial process. Hence, in this chapter, this research adopts a holistic perspective and positions this study in consonance with the views of existing scholarship in the field of entrepreneurship. Later on, the types of entrepreneurship was discussed in detail, culminating into a discussion on the nature and characteristics of entrepreneurship/the role that entrepreneurship plays in the economy. In order to make this study operable in subsequent chapters, a discussion on the TEA rate in South Africa is consummated taking cognisance of the entrepreneurial ecosystem in South Africa.

Meanwhile, after reviewing recent articles on entrepreneurship, it was observed that using the entrepreneurship argument to rationalise the complexities of SMEs is not appropriate, thus this necessitates a thorough study of SMEs. The research gaps identified between the two phenomena informs the next chapter. Consequently, in the following chapter, the term SME is defined appropriately, leading to a discussion on the types of SMEs, as well as a deconstructive argument on the distinction between entrepreneurship and SMEs. Moreover, the factors contributing to the success of SMEs in South Africa will be examined. And thereafter, based on a discussion on SMEs in South Africa, as well as the problems confronting SMEs in South Africa, the way forward will be analysed in detail.

## **CHAPTER 3: AN OVERVIEW OF THE SMALL BUSINESS DEVELOPMENT ENVIRONMENT**

### **3.1 INTRODUCTION**

The transition of South Africa from being a factor-driven economy to efficiency-driven economy has created a disparate fortune of prosperity for the businesses that operate in the country. Unlike the large MNCs that have benefitted tremendously from the expansion of the economy, most SMEs in South Africa are facing tough times. Consequently, most SMEs are now adapting their businesses to new economic realities such as lack of access to finance, shrinking markets, poor infrastructure and over regulation. Likewise, constant strikes have resulted in the enactment of new labour laws, the institution of inefficient bureaucracies, rising crime rate and skills shortage. Clearly, all these factors including high interest rates, the depreciation of the rand, inflation and political disruptions has adversely affected the operation of SMEs in South Africa.

The fact that SME turnover and their contribution to the GDP is steeply declining is no longer news in South Africa. Therefore, researchers/policy makers are alert and united in their quest to assist in turning the fortunes of the 2.3 million small businesses in South Africa. Based on a diagnostic report on post-apartheid government performance, the National Planning Commission (NPC) was empowered by the Zuma led ANC government to draft the national development plan (NDP) vision 2030. In the NDP it is envisaged that by creating 11 million jobs, unemployment rate would be reduced to 6 per cent by 2030. However, the government accessed the entire business environment and found it essential to create a new ministry that will cater for SMEs, in order to achieve the lofty objectives of the NDP. Hence, a new ministry was named the Department of Small Business Development (DSBD) and headed by a female minister, Ms. Lindiwe Zulu in 2014. Furthermore, based on this government directive its agencies, as well as the private sector have also begun to nurture and assist in the establishment, development and growth of SMEs in the country.

The preceding chapter provided a vivid description of the concept of entrepreneurship. This chapter sets out to accurately define the term SME, and then goes further to discuss the types of SMEs, as well as state categorically the differences between entrepreneurship and SMEs. Afterwards, an exploration of the SMEs in South Africa will be carried out, followed by a discussion on the factors contributing to the success of these SMEs. Later on, the impact of the government intervention programmes in the SME sector in South Africa will be reviewed. Lastly, the problems confronting SMEs in South



Africa shall be examined, followed by a closing discussion on the way forward for this sector.

The goal of this chapter was to conduct a literature review on the small business environment in South Africa, in order to build a deeper understanding of SME related realities and issues. Also, in this chapter a theoretical framework that supports and justifies the hypotheses that were formulated for this study was developed. Consequently, this chapter integrates the available literature with empirical findings, using contemporary information that idealises the SME phenomenon in detail. Thus, in the process contribute to new knowledge creation.

### **3.2 DEFINITION OF SME**

There exists a dichotomy amongst scholars about the exact definition of the SME phenomenon. Hence, it has become imperative for both researchers and policy makers to define what is basically regarded as a small business. From an economic perspective, it would appear from the literature reviewed, that references to the term small business include micro and medium-sized businesses and therefore SME equates (to a large extent) to the term small business (Financial Investment Advisory Service, 2007). However, there is no strictly consistent small business definition that is being used universally.

Studies on SMEs reveals that there is a consensus amongst policymakers and researchers that the applicability of the definition of the term SME depends on a country's peculiarities of what a small firm should be or do. Furthermore, one of the generally accepted notions about the definition of SMEs is the diversity constituting this phenomenon based on firm size, levels of capitalisation, sales or turnover, net worth and the level of employment. According to the National Credit Regulator (2011: 22) SMEs can be defined based on either economic or statistical definitions. The economic definition of this terminology assumes that SMEs are independent and owner managed firms that have a relatively small market share. While the statistical definition assumes that SMEs are small firms that contributes little to the GDP of a country, level of employment, exports, as well as the firm's economic sector.

In line with the aforementioned discussion, the National Small Business (NSB) Amendment Act (29 of 2004) defines a small business based on standard industrial classification by sector, and could be relatively known as medium, small, very small, micro, and survivalist firms employing between 5-200 employees with a total turnover of between 200 thousand rand and 64 million rand, with a total gross asset value of between 100 thousand rand to 23 million rand. Consequently, this definition has been adopted by the Banking Association South Africa (2017) in all investment transaction with this sector of the economy. Furthermore, the NSB (102 of 1996) Amendment Act (26 of 2003) gives a more comprehensive definition of business according to five categories, namely, standard industrial sector and subsector classification, size of class, equivalent of paid employees, turnover and asset value – excluding fixed

property. This broad definition (see Table 3.1) ensures that many SMEs can be captured and supported, in order to harness and unleash the creative energies/potentials of entrepreneurs in building a highly desirable inclusive economy.

**Table 3.1 National Small Business Act definitions of SMEs**

Sector	Size	No. of Employees	Turnover	Gross Asset Value
Agriculture	Medium	100	R5m	R5m
	Small	50	R3m	R3m
	Very small	10	R0.50m	R0.50m
	Micro	5	R0.20m	R0.10m
Mining and Quarrying	Medium	200	R39m	R23m
	Small	50	R10m	R6m
	Very small	20	R4m	R2m
	Micro	5	R0.20m	R0.10m
Manufacturing	Medium	200	R51m	R19m
	Small	50	R13m	R5m
	Very small	20	R5m	R2m
	Micro	5	R0.20m	R0.10m
Electricity, Gas and Water	Medium	200	R51m	R19m
	Small	50	R13m	R5m
	Very small	20	R5.10m	R1.90m
	Micro	5	R0.20m	R0.10m
Construction	Medium	200	R26m	R5m
	Small	50	R6m	R1m
	Very small	20	R3m	R0.50m
	Micro	5	R0.20m	R0.10m
Retail and Motor Trade and Repair Services	Medium	200	R39m	R6m
	Small	50	R19m	R3m
	Very small	20	R4m	R0.60m
	Micro	5	R0.20m	R0.10m
Wholesale Trade, Commercial Agents and Allied Services	Medium	200	R64m	R10m
	Small	50	R32m	R5m
	Very small	20	R6m	R0.60m
	Micro	5	R0.20m	R0.10m
Catering, Accommodation and other Trade	Medium	200	R13m	R3m
	Small	50	R6m	R1.9m
	Very small	20	R5.10m	R1m
	Micro	5	R0.20m	R0.10m
Transport, Storage and communications	Medium	200	R26m	R6m
	Small	50	R13m	R3m
	Very small	20	R3m	R0.60m
	Micro	5	R0.20m	R0.10m
Finance and Business Services	Medium	200	R26m	R5m
	Small	50	R13m	R3m
	Very small	20	R3m	R0.50m
	Micro	5	R0.20m	R0.10m
Community, Social and Personal Services	Medium	200	R13m	R6m
	Small	50	R6m	R3m
	Very small	20	R1m	R0.60m
	Micro	5	R0.20m	R0.10m

2

**Source: The Banking Association South Africa (2017)**

Based on standard industrial classification the agricultural sector, mining and quarrying, manufacturing, construction, electricity, gas and water sectors, and so on have been categorised separately. More so, the differences in the size of each class necessitates the sorting of businesses as either medium, small, very small and micro enterprises. Likewise, the total fulltime equivalent of paid employees, total turnover, and total gross asset value excluding fixed property is linked to the corresponding size of business for simplicity. However, in practice, most companies might have more than one attribute that is stated above. According to the United Nations Industrial Development Organisation<sup>6</sup> - UNIDO (2004: 20) the definition of SMEs is a significant issue for policy development and implementation, and varies from country to country. Hence, these definitions are useful:

- *In the preparation of vital SME statistics and the monitoring of the performance of each sector over time;*
- *In benchmarking against other economies and between regions within an economy;*
- *In providing arbitrary thresholds for the imposition of tax, conditional access to finance, employee insurance and other regulations;*
- *In determining eligibility for particular forms of public support especially with respect of government intervention schemes.*

**Table 3.2 Synopsis of SME Definitions by Country**

Country	EU	Ghana	RSA	Malaysia	China	India	Russia
Term	Small and Medium Enterprise	Micro, Small and Medium Enterprises	Small, Medium and Micro Enterprises	Small and Medium Enterprise	Small and Medium Enterprise	Micro, Small and Medium Enterprises	Small and Medium Enterprise
<b>No. of Employees</b>							
Micro	<10	<5	<20	<5	<100	2-9	1-15
Small	<50	6-29	50-99	5-75	<300	10-49	15-100
Medium	<250	30-99	100-200	75-200	300-2000	50-249	101-250
<b>Turnover</b>							
Micro	≤ € 2m	<\$10k	<R0.2m	<RM300k	<Y10m	<Rs5m	RUB 60m
Small	≤ € 10m	<\$100k	R0.5m-R32m	RM300k-RM15m	<Y30m	Rs5m-Rs100m	RUB 400m
Medium	≤ € 50m	<\$1m	R5m-R64m	RM15m-RM50m	Y30m-Y300m	Rs100m-Rs300m	RUB 1b
Total no. of companies represented	99%	92%	91%	97.3%	99%	99%	94%

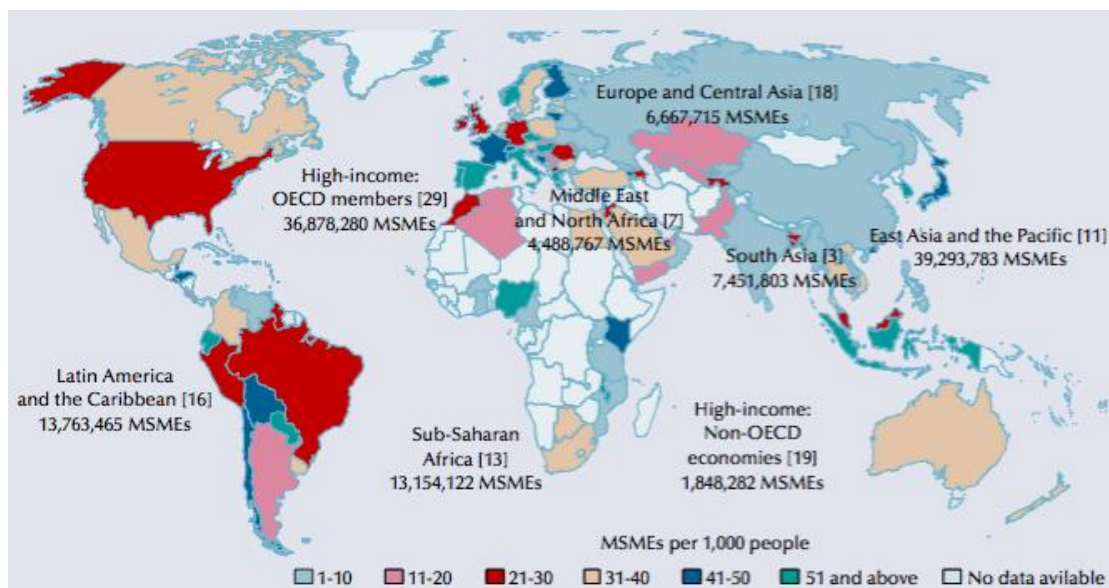
**Source: Authors' compilation.**

Table 3.2 above indicates that various countries use different terminologies when referring to small businesses. According to the National Credit Regulator (2011) small businesses are referred to as small and medium enterprises

<sup>6</sup> The specialised agency of the United Nations dedicated to improving the lives of people in developing countries and in countries with economies in transition through industrial development.

(SMEs) in the European Union (EU), Malaysia, China, and Russia, as well as by the World Bank, the United Nations (UN) and the World Trade Organisation (WTO). While the term micro, small and medium enterprises (MSME) is used in India and Ghana. Furthermore, in South Africa the term small, medium and micro-enterprises (SMMEs) is widely used in the entrepreneurship literature. Whereas, in the United States of America (USA) the terminology small and medium businesses (SMBs) is predominantly used in similar studies when referring to small businesses.

Furthermore, based on the definition of SMEs above, SMEs represent 99 per cent of all businesses in the EU, which translates to about 21 million SMEs in this region that employ 33 million people (European Commission, 2014). Similarly, in China and India, SMEs represent 99 per cent of all businesses, and contributes 45 per cent of jobs in India, whereas in China 10.3 million companies are SMEs (China Daily, 2010). Likewise, SMEs in Ghana comprises of 92 per cent of the total number of companies in the country (Ghana Government eServices Portal, 2011). While in Russia, Malaysia and South Africa SMEs represent 94, 97.3 and 91 per cent of the entire businesses in these countries respectively (Federal Web Portal, 2016). According to the Serviço Brasileiro de Apoio às Micro e Pequenas Empresas -SEBRAE (2016) the Brazilian service of assistance to micro and small enterprises (SME's) are the expression of free initiative, social inclusion and citizenship. Hence SMEs deserves government training support, financial service and assistance, promotion and market access, as well as technical support and assistance.



**Figure 3.1: SME Density Across the World (Source: Kushnir et al., 2010)**

According to the OECD (2006) defining an SME is a challenging task and the peculiarities of SMEs reflects the economic patterns and the socio-cultural

idiosyncrasies of every nation. Kushnir, Mirmulstein and Ramalho (2010) study of SME country indicators for 132 countries reveal that there are 125 million formal SMEs in the world. Furthermore, it was observed that emerging markets have about 89 million of these kinds of businesses across the world. From the definitions above, one third of the economies understudied state that SMEs have up to 250 employees and on average there are 31 SMEs per 1000 persons. East Asia and the Pacific and high-income OECD countries have the highest density of SMEs in relation to the population. However, Sub-Saharan Africa's 13 million SMEs is about half a million less than that of Latin America and the Caribbean (Kushnir, 2010). But, on average, SME density in Sub-Saharan Africa per 1000 persons is approximately about 51 based on available data. Unsurprisingly, in line with the TEA rate figures, South Africa has about 31-40 SMEs per 1000 persons.

Although it is a widely held notion that SMEs trigger, accelerate and sustain economic growth, as well as ensure a balanced development in developing countries, most poor nations are held back by their size (Klapper, Amit, and Guillén, 2010). These firms are unable to capture market opportunities as a result of diseconomies of scale, lack of skilled and well-trained manpower, poor market intelligence, logistics and the reliance on labour driven low technology manufacturing base (Stein, Goland and Schiff, 2010). Likewise, there is a new shift towards politically supported entrepreneurship. This system supports and handpicks the cronies of the top echelon of the society in less developed countries, subsequently empowering them with government finance to start-up businesses (Herrington, Kew and Mwanga, 2017). Despite these kinds of SMEs being widespread in developing countries, they will certainly aggravate the current failure rate in the long run. One thing is clear, the personal motivation of entrepreneurs is the most significant factor that inspires most SME founders/owners to attain success in the long run.

Some experts are seeking a qualitative definition of SMEs that embodies and reflects issues of ownership and (inter) dependence. Hence, SMEs can be defined as those nimble firms that enjoy high levels of autonomy with less formal hierarchies and established structures (Kushnir, Mirmulstein and Ramalho, 2010). More so, it is fundamental that the growth of sustainable SMEs should be based on a thriving macroeconomic environment that is both competitive and dynamic (Herrington, Kew and Mwanga, 2017; Bosma et al. 2020). Furthermore, it is essential that the media promote a positive attitude towards the entrepreneurial culture of innovativeness in the society, so that more people can freely venture into the risky business of establishing SMEs.

### 3.3 TYPES OF SMES

Based on the aforementioned definition of SMEs, various researchers have observed the varying nature of small firms worldwide. Consequently, SME pattern of growth and development is acting as a catalyst and motivation for scholarly studies into new fields that recognises the impact of several types of SMEs on economic growth (Herrington and Kew, 2018; Dana et al., 2018; Bosma and Kelley, 2019; Bosma et al. 2020). According to Hodell (2016) SMEs plays specific roles and can be divided into five categories: technical, hybrid, instructional, functional, and sentinel SMEs.

- ❖ Technical SMEs are highly skilled specialised technical knowledge content firms that work in groups and provide services for clients. This type of SME is very innovative, and are common in advanced countries. Technical SMEs include original equipment manufacturers (OEM), original brand manufacturers (OBM), electronics manufacturing service (EMS) providers, contract electronics manufacturers (CEM) and original design manufacturers (ODM) etcetera (Mayes, 2015). For example, companies such as Robert Bosch, 2 Denso Corp., 3 Continental AG., Magna International Inc., Huawei, Apple and Foxconn are firms that participate in this kind of entrepreneurship. Also, engineers, scientists, lawyers, medical professionals, and other skilled trade workers are mostly associated with this type of SME.
- ❖ Hybrid SMEs combines substantial documented expertise in the areas of content creation and implementation (Deakins and Freel, 2012). For instance, an ecommerce development SME needs to have the ability to design, develop, install and implement a website solution for both clients and customers.
- ❖ Instructional SMEs are firms that provide coaching, mentorship and facilitate the dissemination of knowledge in areas where they have subject matter expertise (Herrington Kew and Mwangi, 2017; Bosma et al. 2020). Within the past decade many motivational speakers have come up with both online and onsite solutions that inspires people to take up leadership and entrepreneurial opportunities.
- ❖ Functional SMEs are highly skilled firms that are being run by specialised professionals who can be either programmers, software designers, photographers, artists, writers etcetera (Global Entrepreneurship Monitor, 2017). Although, functional SMEs are not content or implementation experts they are often embedded in the design team.
- ❖ Sentinel SMEs are firms who monitor and manage projects, although such companies do not contribute directly to content creation, they often assist on numerous aspects of the technical side of projects (Sarkissian,

2017). For instance, in a building and construction project, you will have an architectural firm sitting on project boards of a construction company. Furthermore, sentinel SMEs participate in projects as members of the governing board, oversight or technical committees or grant committees.

Similarly, Mills (2015) observes that there are predominantly four main types of small businesses, which are: non-employee businesses, main street, suppliers, and high-growth. The most common type of small firms is known as the non-employee businesses, which are mainly sole proprietorships that do not have employees (Hakobyan, 2016). These types of firms operate in almost all sectors of the economy, covering areas such as consulting, IT specialists, kiosk vendors, masons, painters, roofers etcetera. Recent research shows that many one-man businesses are achieving record profit margins. However, it is predicted that the growth of these businesses would be accelerated by increased use of technology which allows greater access to the global marketplace (Lafuente, Szerb and Acs, 2015). Despite the fact that these firms provide income to only their owners and engages many unemployed persons, they are not regarded as job creators.

The second category of small businesses called the main street is made up of local firms serving both consumers and other local businesses concurrently. These kinds of small businesses are mostly family owned, and employ a significant portion of manpower (Mills, 2015). Also, the striking characteristic of these businesses are that they do not principally focus on firm expansion, with high churn rates. It has been observed that main street businesses are critical to the growth of the middle class of all countries, since they provide the pathway to economic mobility (Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018; Dana et al., 2018; Bosma and Kelley, 2019; Bosma et al. 2020). These kinds of businesses comprise of restaurants, shops and storefronts that shape, influence and reflect the diverse identities and values of the various segments of our society.

Furthermore, Mills (2015) is of the view that suppliers are the third type of small businesses and they engage in trade with both commercial and government supply chains. Likewise, suppliers use their engagement with other businesses to conduct business to business (B2B) transactions. More so, unlike main street firms, these firms have a higher level of management sophistication, and often concentrate on organic growth and low level export initiative (SEDA, 2016b). It has been observed that a robust network of small suppliers is an important factor that will lead to the long-term competitiveness of large MNEs. This is because it creates low logistical costs, promotes rapid problem solving and easier joint innovation in business clusters.

The last but not the least type of small business according to Mills (2015) are high growth start-ups and firms, which are predominantly fast-growing, innovation-driven businesses that create jobs at a remarkable speed, when compared to other types of small businesses. It is important to note that high growth firms are also known as gazelles because of the disproportionate high growth outcomes that these businesses generate (Acs and Mueller, 2008). Furthermore, a thorough appraisal of the types of small businesses reveals that the differences in the size of these firms imply that separate policies and regulations can be applied to them (Lafuente, Szerb and Acs, 2015). SME's that are listed on the JSE's AltX are expected to thread this high-growth path within a remarkable short period of time.

Moreover, depending on the nature of these firms, issues like the amount of seed capital, bank loan or equity investment that is required to finance these businesses are of critical importance to the growth and sustainability of such endeavours. It will suit high growth firms to operate either close to a university or a business cluster, in order to boost their innovation ecosystem. While main street firms are better sited in downtown areas where large businesses are scarce. Mills (2015) suggests that differentiating between small businesses is important to realising why each variety matters. In fact, what accelerates one variant will not necessarily have the same impact on another. Ultimately, there is growing evidence that small businesses enhance the rate of innovation in any economy and promote social mobility. However, separate policies need to be carved out for various kinds of firms, so that they can all succeed notwithstanding their differences (Herrington and Kew, 2018; Dana et al., 2018; Bosma and Kelley, 2019; Bosma et al. 2020).

In the same vein, Thompson (2017) study of the types of small businesses uncovers that every SME can be categorised based on their legal and ownership structure, company size and business location. Thus, the legal status of SMEs could be in the form of sole proprietorships, partnerships, S-corporation or a limited liability company (LLC). Likewise, small businesses can operate as independent contractors such as consultants, painters, plumbers, freelance writers, event planners etcetera based on agreements/contracts on a per-job basis. Furthermore, business location can be used to differentiate SMEs (Fox and Liebenthal, 2006; World Bank, 2011). While, some SMEs operate as physically sited businesses, many new SMEs have embraced the virtual marketplace. In a fast pace world, most firms offer a combination of both virtual and physical location, be it a legal firm, accounting firm, hotel catering facility, restaurant or storefront.

Additionally, the categorisation of SMEs have been undertaken using broad perspectives such as small businesses being production SMEs, trade SMEs and tertiary service SMEs (Global Entrepreneurship Monitor, 2017). The new



B-BBEE regulation regarding procurement contracting to under-represented parts of the population is aiding the development of minority-owned and women-owned businesses in South Africa, especially with respect of listed firm’s operations (EY, 2013). Notwithstanding the nature of SMEs, these firms contribute significantly to the economic growth of all countries (i.e. including South Africa) both as job creators and income redistribution agents (Hisrich, Peters and Shepherd, 2013; Yücel and Önal, 2015).

### 3.4 DIFFERENCES BETWEEN ENTREPRENEURSHIP AND SMES

The term entrepreneurship is often used interchangeably with SMEs in the small business literature (Herrington and Kew, 2018; Dana et al., 2018; Bosma et al. 2020). In fact, both entrepreneurial ventures and SMEs have similar characteristics at inception, however with hard work and perseverance over a period of time few SMEs become entrepreneurial ventures (Ed, 2016; Brooks, 2017; Hill, 2017). Hence, this requires a thorough evaluation, in order to reveal that there exist considerably striking differences between these two phenomena. According to Lucky (2012) the inconsistent use of the term SME and Entrepreneurship in the field of entrepreneurial business management causes discrepancies in the literature. As such, it stimulates new research and policy studies that further the broad understanding of these phenomena.

**Table 3.3 Differences between Entrepreneurship and SMEs**

	Entrepreneurship	SMEs
Definition	Process where an individual discovers, evaluates, and exploits opportunities independently	Firms or business ventures managed by individual owners
Firm Size	Large, medium or small	Small and medium only
Number of participants	Small to large	Small
Purpose	To discover, innovate and establish	To produce, buy and sell
Degree of risk	Varies	Lower
Economic Sector	Private, government and not-for-profit	Private sector only
Key attributes	High need for: achievement; internal locus of control; creativity and innovation; high growth	Organisational skills to manage efficiently, little innovation, moderate growth, moderate need
Growth focus	High	Varies

**Source: Lucky (2012)**

Table 3.3 provides a useful summary of the literature conundrum by vividly stating the differences between entrepreneurship and SMEs (Lee-Ross and Lashley, 2009). As illustrated above, entrepreneurship can be viewed as the process of discovering, evaluating and exploiting opportunities, while SMEs practically involves the management of firms or business ventures (Lucky, 2012). Furthermore, entrepreneurial firms engage small numbers of employees at start-up. And later on, as the firm size expands from small to large, so also

does the manpower requirement for these businesses. However, SMEs are made up of only small and medium businesses that employ a small number of staff overtime (Herrington and Kew, 2018). In addition, entrepreneurial ventures risk appetite varies depending on the nature of these firms, while SMEs only commit their resources to low risk businesses (Simpson, 2015). Likewise, firms in the entrepreneurial domain have a high growth focus and capacity, unlike SMEs whose growth locus varies depending on the size of these firms (Seth, 2017). Also, entrepreneurial firms participate in both the private and public sectors of the economy, as well as in the not-for-profit domain, while SMEs only participate in the private sector. It is expected, that SMEs that are listed on the JSE's AltX will have a high-growth entrepreneurial drive after registering on the lower bourse.

As stated in the previous chapter, the key attributes of entrepreneurial firms are high need for: achievement, internal locus of control, creativity and innovation, and high growth. While the main attributes of SMEs are savvy organisational skills to manage efficiently, nimbleness, low level of innovation, and a moderate growth focus. Consequently, entrepreneurs and SMEs exploit the strategic business environment in different ways. Besides, this eccentric distinction between entrepreneurship and SMEs is a fundamental requirement in the study of firms that are listed on the AltX. Therefore, for the purpose of clarity and unambiguity, researchers and policy makers need to adequately demarcate firms, in order to accurately measure the impact of listing on their performance. Definitely, this will assist in resolving the inconsistencies in the findings of similar studies carried out on the JSE's AltX.

**Table 3.4 Eccentric distinctions between Entrepreneurship and SMEs**

Entrepreneurship	SMEs
Risk taking	Risk ameliorating
Never satisfied with status quo	Shadow trends
Thrive on chaos	Relies on the certainty of probable returns
Fail and Freshen up	Concentrate on quick-wins and cash flow
Extremely technical and transformative	Bricks-and-mortar (buy/sell) business
Very innovative (own inventions, patents, copyrights)	Uses existing business model
Uses the latest technologies	Imitate existing model without adding value
View their business as assets	View their business as history
Prefer passion over profits	Fancy profiteering over fame
Incorporated business	Mostly unincorporated businesses
Driven by the lure of independence	Driven by the strive for livelihood
Motivated by deviant behaviour	Motivated by conformist behaviour
More employees	Employ few people
Ability to foresee the future	Ability to extrapolate current affinities
High energy environment	Low energy environment
Problem solving	Trade exchange oriented
Consist of repeatable and scalable businesses	Routinely static and low growth businesses

**Source: Authors' compilation.**

Table 3.4 gives a clear distinction between entrepreneurship and SMEs. According to Marks (2012) entrepreneurship involves bigger risks, investment and equity partnerships that are not inhibited by either the fear of failure or loss of collateral. While SME's gambles are small, risk ameliorating and less profitable. Besides, in anticipation of the next 'Big One' breakthrough project, entrepreneurs enjoy action, thrive on chaos and are never satisfied with the status quo (Herrington and Kew, 2018; Dana et al., 2018). However, SMEs avoid failure by investing in businesses with a probable return on investment. Also, entrepreneurship has been observed to be associated with a technical process that causes creative destructions in science – churning out new technologies that are either inventions, patents, copyrights or trademarks (Bosma and Kelley, 2019; Bosma et al. 2020). Nevertheless, SMEs are primarily concerned with profit margins, revenue projections and the operational costs of trading. Brooks (2017) notes that incorporation assists entrepreneurs to launch ventures that require high-level cognitive skills, while SMEs are mostly unincorporated businesses typically led by manual talents.

Furthermore, the products of entrepreneurship are novel, non-routine and cognitively challenging. Whereas, SMEs perform fairly routine activities, requiring less formal education. More so, the legal protection of incorporated businesses grants entrepreneurs the freedom to invest in larger and riskier investments unlike unincorporated SMEs (Herrington and Kew, 2018; Dana et al., 2018; Bosma and Kelley, 2019; Bosma et al. 2020). Consequently, incorporation causes the rapid growth of firms, and also creates employment opportunities. It has been observed by several scholars that entrepreneurship creates businesses processes that are repeatable, adaptable and scalable, while SMEs are primarily operated for profit purposes, and trade in local markets as non-dominant players in their industry. Many entrepreneurial companies commit to long hours of work, and their office environment is characterised by high energy and ideation that is filled with the excitement of future success (Hill, 2017). However, on the contrary, SMEs just create and operate the most efficient, well-organised work environment possible for employees.

According to ED (2016) entrepreneurs proffer intuitive solutions, while SMEs most times employ skilled personnel to solve business issues. Similarly, entrepreneurship views challenges as opportunities, which can be exploited through initiative, however, SMEs perceive business impediments as obstacles to their growth and development. Likewise, Seth (2017) suggests that SMEs usually deal with known and established business models, products and services, while, entrepreneurial ventures offer new innovative products and services. Also, he observed that SMEs prefer to deal with known risks that offer

limited growth and continued productivity. However, entrepreneurship deals with unknown risky ventures that offer rapid growth and high productivity returns. Hill (2017) is of the view that SMEs are adept at administration, and in particular, these firms focus on the need for operational efficiency taking cognisance of customer satisfaction, organisational capabilities, profitability and the minimisation of costs. But, entrepreneurship focus on core issues such as company strategy, vision and mission. Furthermore, these firms are characterised by a high energy sapping and dynamic environment where entrepreneurs/founders/owners are optimistic about the future prospect of their business.

Baskerville (2015) own contraption is that both phenomena are basically the same if not for dissimilarities in business models, intent, function and funding arrangements. According to him entrepreneurship causes start-ups to build disruptive organisations that capitalises on the opportunity that a repeatable and scalable business model offers. Hence, this causes such firms to transform rapidly from small to big and then to large MNEs within a very short period of time. On the other side, SMEs as independently owned and operated firms, which are solely organised for profit, and do not try to dominate their markets. Entrepreneurial firms thus are agile businesses that think big, grow big and later become a structured company (Bosma et al. 2020). Whereas SMEs are structured businesses that encourages individuals to build financially sustainable firms through the delivery of value to known customers, without changing rapidly overtime. Besides, entrepreneurial ventures in a bid to transition from small to large disruptive enterprises requires equity funding, which dilutes the ownership and profit-sharing formula for these firms. While SMEs stay small in order to retain ownership and control of their businesses, which means that these two phenomena require separate funding approach. Listing on the JSE's AltX would definitely increase the pace of SME transformation into high growth entrepreneurial firms.

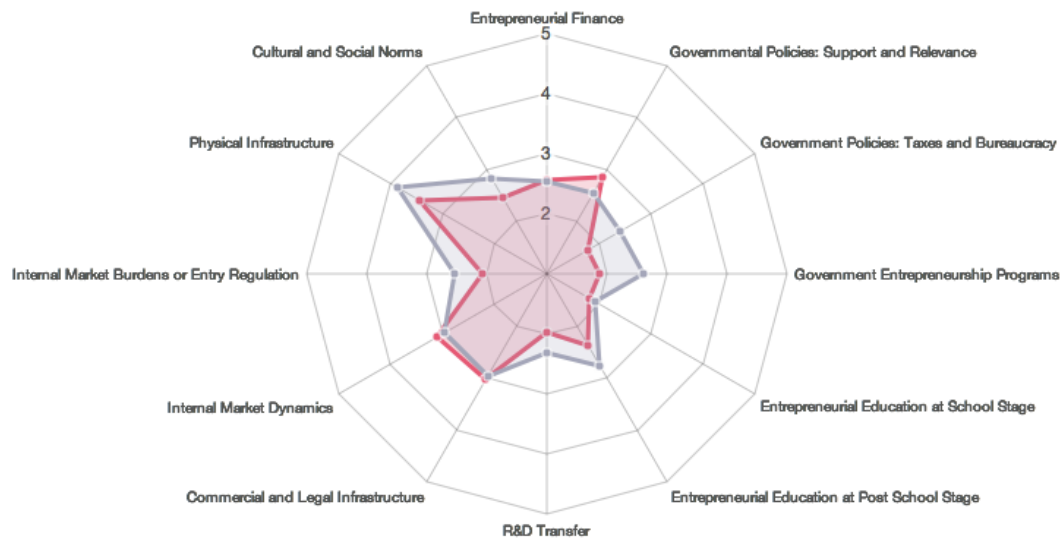
Going further, entrepreneurial ventures according to Seth (2017) generally impact economies and communities significantly more because they cause a cascading effect on other sectors and help in job creation. Also, entrepreneurship is based on the philosophy to 'fail and freshen up' and 'let it go – to let it grow'. Unlike SMEs that are bricks-and-mortar businesses that concentrate on quick-wins and cash flows (Baskerville, 2015). Seth (2017) points out that entrepreneurial firms identify and capitalise on a mix-n-match approach, thus creating such enterprises is borne out of pure ingenuity. For instance, Google did not invent the internet but exploited and optimised the search capabilities of the world wide web. Likewise, McDonald's did not invent the cheeseburger, Starbucks did not invent coffee, Airbnb do not own any home-hotel, and Uber does not own taxicabs, but they revolutionised the taste,

selling and distribution patterns of their industry. Therefore, bulk purchasing and retailing of goods and services do not constitute entrepreneurship. Likewise, shops, restaurants, gas stations, landscapers, plumbers, electricians, pizza guys and exterminators are not entrepreneurial ventures but small businesses operated by experienced SME participants.

Marks (2012) opined that entrepreneurs view their businesses as assets that can be sold for profit, while SMEs are more sentimental about their businesses, which they view as part of their history. Similarly, entrepreneurship literature emphasise that passion is the main motivating factor for entrepreneurs, whereas, SMEs prefer profits over passion. Seth (2017) went further to differentiate these phenomena based on the quantum of growth that is mobilised. He observed that SMEs aim for limited growth and continued profitability, while entrepreneurial firms target rapid growth and high productivity returns. Likewise, entrepreneurship generally impacts on economies and communities in a significant manner (Herrington and Kew, 2018; Dana et al., 2018; Bosma and Kelley, 2019; Bosma et al. 2020). According to Simpson (2015) more millennials self-identify as entrepreneurs compared with older business owners, despite the fact that a vast majority of the second group are actually business owners. Finally, it is important to note that while most entrepreneurial ventures start out as a small business, not all small businesses are entrepreneurial in the strict sense of the term.

### **3.5 SMES IN SOUTH AFRICA**

Recent studies carried out by SME Growth Index (2015) shows that SME sustainability and growth has a strong bearing on wealth creation in the country. This has compelled the government to create policies that promote the effective development and increased participation of SMEs in the mainstream economy (Herrington, Kew and Mwanga, 2017). However, contrary to expectations, the findings of many research studies reveal that the impact of the 2008 financial crises have contributed immensely to the reduction of the number of SMEs in South Africa. Most sectorial participants observe that the entrepreneurial ecosystem is inhibited by lack of sufficient financing, stringent government policies that are characterised by high-level taxation and bureaucracy. Likewise, substandard educational training, poor R&D, entry restrictions and unsupportive socio-cultural norms have led to the low distribution patterns of SMEs in South Africa. Consequently, the DSBD has developed a new growth path that invests in about 300,000 SMEs annually, in order to achieve a GDP growth of 5 per cent. This departmental intervention in the small business sector is expected to generate about five million jobs in 5 years (DSBD, 2016).



**Figure 3.2: South Africa's GEM statistics (Source: GEM, 2017)**

From Figure 3.2 above, it can be deduced that SMEs in South Africa represented by the pink coloured shaded area benefit from well-planned government policies when compared to the world average (ash shaded area). According to Herrington, Kew and Mwangi (2017) South Africa's strong internal market dynamics, commercial, legal and physical infrastructure is being offset by insufficient R&D protocols, coupled with deficient entrepreneurial educational systems. Thus, few SMEs are able to survive, which leads to high and persistent unemployment in the country (Herrington and Kew, 2018; Bosma et al. 2020). Going further, most SMEs complain of the huge costs associated with the registration of businesses, B-BBEE compliance requirement, new labour legislation and environmental standards (Global Entrepreneurship Monitor, 2017; Herrington and Kew, 2018; Dana et al., 2018; Bosma and Kelley, 2019; Bosma et al. 2020). Besides, reoccurring political skirmishes, strikes, weakening rand, low growth, currency hedging risks, rising labour costs, bureaucratic redtapes, high interest and inflation rates adds to a plethora of problems for investors in this segment of the economy (Herrington and Kew, 2018).

**Table 3.5 SMEs in South Africa and Macroeconomic indices**

Year	Number of SMEs	TEA Rate	GDP Current US \$	Economic Freedom
1995	836,850	NA	155,461,000	60.7
1996	NA	NA	147,701,000	62.5
1997	906,690	NA	152,611,000	63.2
1998	2,195,870	NA	137,686,000	64.3
1999	2,269,200	NA	136,550,000	63.3
2000	1,626,459	NA	136,453,000	63.7
2001	2,258,000	6.49	121,602,000	63.8
2002	NA	6.30	115,748,000	64.0
2003	NA	4.21	175,254,000	67.1
2004	NA	5.27	228,931,000	66.3
2005	1,668,000	5.11	257,667,000	62.9
2006	NA	5.14	271,812,000	63.7
2007	2,432,000	NA	299,033,000	63.5
2008	2,182,823	7.76	287,095,000	63.4
2009	1,144,000	5.92	297,221,000	63.8
2010	5,979,510	8.86	375,304,000	62.8
2011	NA	9.14	416,879,000	62.7
2012	1,939,000	7.32	396,332,000	62.7
2013	1,517,000	10.59	366,821,000	61.8
2014	2,800,000	6.97	350,901,000	62.5
2015	2,251,821	9.19	317,578,000	62.6
2016	2,182,283	6.91	296,273,000	61.9
2017	2,407,440	10.96	349,433,000	62.3
2018	2,557,762	NA	368,135,000	63.0
2019	2,653,424	10.77	351,430,000	58.3

**Source: Authors' compilation.**

Table 3.5 above indicates that SMEs in South Africa have grown from about 0.8 million to about 2.6 million in just two and a half decades. However, after the soccer world cup in 2010 when the number of SMEs peaked at about 6 million, there has been a persistent decline in the density of small businesses in South Africa. For the first time since the abolishment of apartheid, South Africa's degree of business freedom has moved downwards from the moderately free segment to the mostly unfree segment signalling a deterioration in the business environment (The Heritage Foundation, 2020). Huge risks abound due to the recent calls for land reform, persistent high unemployment rate, rising crime rate, increasing government size and also, corruption is making the country unfriendly to both small and large businesses. Since SME definitions are also vital references in the preparation of statistics and the monitoring of the performance of the SMME sector in South Africa, there is need for both policy makers and researchers to be on the same page as to what constitutes an SME given the current inconsistencies in data provided for this sector by various stakeholders (SBI, 2020). In an attempt to redress this problem, the government has set up the DSBD and used its agencies to finance so many SMEs. Despite the multi-faceted nature of these

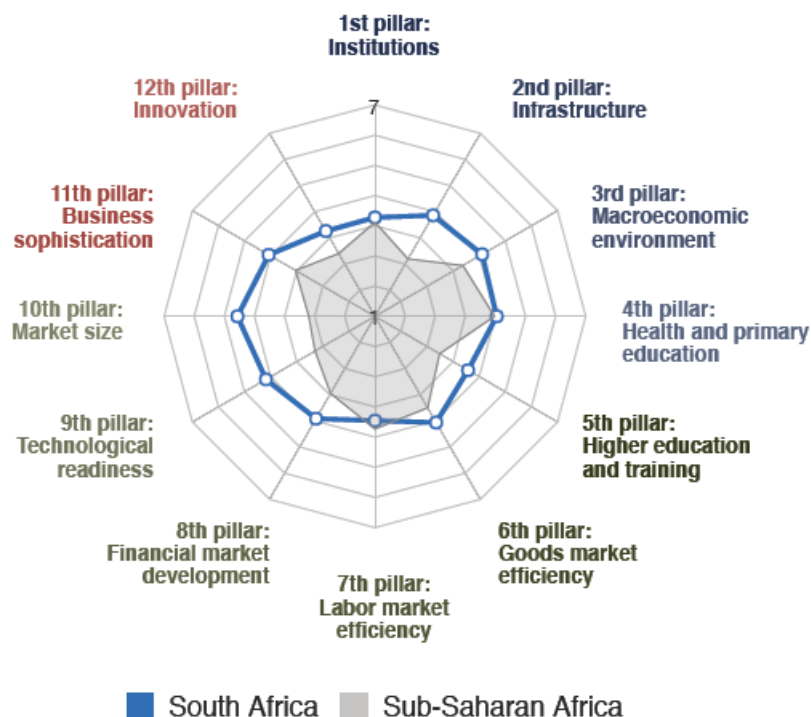
policies, little success has been achieved thus far. Evidence can be found in the low TEA rate in South Africa, which is below both emerging country's average and that of sub-Saharan Africa (Amorós and Bosma, 2014). Furthermore, the expansion of the GDP of South Africa over two and a half decades by over 110 per cent indicates that the economy has the potential to produce more SMEs and slash the current unemployment rate by half. Likewise, the economic freedom trend (Miller and Kim, 2017), which is above the world average, has motivated notable successes in trade freedom and monetary stability, however, private sector growth remains constrained by structural and institutional impediments. Several investors are unenthusiastic about investing in a state-dominated marketplace where countless scandals and frequent political infighting is undermining the integrity of all arms of government. This weakening investor confidence is stifling SME growth in South Africa.

On an optimistic note, the B-BBEE program has been able to redress some of the inequalities of the past (i.e. the apartheid system). Interestingly, it has encouraged many disadvantaged groups to embrace entrepreneurship and to set up SMEs all over the entire country. According to Siwela (2020) the SEDA and the Small Enterprise Finance Agency (SEFA) reported that through the co-locations at 87 municipalities and partners, with 23 co-locations at SEDA branches, and 11 mobile units they have ensured consistent service delivery nationwide for businesses. Furthermore, R1.5 billion approved via the SEFA loan programmes was successfully paid out to beneficiaries, leading to the disbursement of R182 million to black-owned SMMEs and R40 million to youth-owned enterprises in the country. Consequently, black entrepreneurs now constitute about 73% of SMME owners in South Africa (SBI, 2020). But this temporary success does impact on the quality of SMEs that operate in the country. Although the B-BBEE program has been very successful, there is a dire need to pacify white investors and build their business confidence in the economy. Madiba's opening statement at the Rivonia treason trial exposed apartheid as the fight against either white or black domination, so there is need to ensure some form of economic fairness too (The Sydney Morning Herald, 2013). Besides, the changing demography of South Africa is giving room for undercapitalised SMEs that fail in a relatively short period of time. This justifies call for a new program to attract white stakeholders/investors. According to Miller and Kim (2017) SMEs will only thrive in a democratic and free society devoid of any form of racism, where the individual aspirations of citizens can be exploited without rancour. Efforts should be concentrated on attracting quality SMEs to operate in the country, so that they can impact the society on a larger scale. Jackson (2020) projects that more than 55,000 SMMEs will not survive the COVID-19 pandemic and related economic chaos in the country, which would also lead to job losses too.



### 3.5.1 FACTORS CONTRIBUTING TO THE SUCCESS OF SMES IN SOUTH AFRICA

Numerous factors are responsible for the unprecedented growth of South African SMEs. According to Kim (2011) SMEs are considered important because of the rapid economic transformation that is linked to their activities. Matter-of-factly, they are the engine of growth of developing countries' economies. Kunene (2008) is of the view that several external (i.e. exogenous) factors, as well as some internal (i.e. endogenous) factors contribute significantly to the success of South African SMEs. This is in contrast to the unfavourable failure inducing problems confronting its sub-Saharan African peers (Global Entrepreneurship Monitor, 2017). On a macro level, this could entail that South African SMEs derive benefits from country specific advantages (CSAs), which may comprise of factors external to small businesses that either facilitate (or inhibit) them from inception to maturity. Also, on a micro scale, FSAs inbound by the manner in which South African SMEs harness resources, could be responsible for their remarkable success rate. Various scholars have noted that the aforementioned factors are not controllable. However, the success of South African SMEs can be traced to the managerial capability of these firms, especially with respect to making timely decisions that positively impacts on their operations (Herrington, Kew and Mwanga, 2017).



**Figure 3.3: South Africa's GCI (Source: World Economic Forum, 2017)**

The radar graph above displays the multivariate data of the Global Competitive Index (GCI) ranking of South Africa in a simplified cobweb format. The GCI

ranking (as indicated by the sequence of equi-angular spokes above) has consistently ranked South Africa as one of the most competitive countries in Africa. In fact, the World Economic Forum (2017) GCI ranking of South Africa placed the country as the 61<sup>st</sup> most competitive nation in the world. Its favourable macroeconomic environment places its SMEs ahead of other African rivals. This is because South African small businesses are more innovative, and relies on the strong institutions and infrastructure for support, unlike other African countries where many SMEs are forced to provide most of the vital amenities that can be used to facilitate their operations e.g. electricity. Furthermore, the nation's SMEs leverage on its strong labour market efficiency, good educational institutions, technological readiness and the best financial market in Africa.

Despite South Africa's population being only 55.6 million, the inefficiencies of other African markets create export opportunities for the country's SMEs. In addition, since most small businesses now have the opportunity to list on the JSE's<sup>7</sup> AltX, where they can raise enough capital that can be used to rapidly expand their operations overseas, these firms are expected to become born-globals within a relatively short period of time. According to Miller and Kim (2017) the protection of property rights and the security of contracts create substantial advantage for South African companies, who have access to the most sophisticated financial sector in Africa. Similarly, Reginald and Millicent (2014) find that there are three key success factors for South African SMEs, which are; entrepreneurial success factors, managerial success factor, and marketing success factors. It is common in many Southern African Development Community (SADC) countries to find South African companies that operate regionally, from where they would expand across the continent before branching out to European, Australian and the American markets. Likewise, Sefiani (2013) identifies three generalised influences that activates the potential and how successful South African SMEs can be overtime; this includes the language skills factor, the financial and networking factor, and the location factor. Table 3.6 below explains in detail the factors that impact on SME performance in South Africa taking cognisance of the aforementioned facts.

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<sup>7</sup> The JSE is Africa's largest stock exchange, and is among the top 20 stock exchanges in the world. As the 17<sup>th</sup> largest bourse by market capitalisation, it is just US \$50 billion shy from joining the exclusive US \$ 1 Trillion Club.

**Table 3.6 Factors affecting SME performance in South Africa**

Exogenous or External Factors	Endogenous or Internal Factors
Macro economic factors <ul style="list-style-type: none"> <li>➤ Geographic area and region</li> <li>➤ Density</li> <li>➤ Inflation</li> <li>➤ Interest rates</li> <li>➤ Unemployment</li> <li>➤ Exchange rates</li> </ul>	Company demographics factors <ul style="list-style-type: none"> <li>➤ Size of firm</li> <li>➤ Age of firm</li> <li>➤ Organisational structure</li> <li>➤ Community networks</li> <li>➤ Product/service differentiation</li> </ul>
Political-Institutional factors <ul style="list-style-type: none"> <li>➤ Macro-economic policies</li> <li>➤ The business environment</li> <li>➤ The judiciary</li> <li>➤ Bureaucracy</li> <li>➤ Public support</li> </ul>	Human demographics factors <ul style="list-style-type: none"> <li>➤ Age</li> <li>➤ Gender</li> <li>➤ Family background</li> <li>➤ Exposure to role models</li> </ul>
Socio-Cultural factors <ul style="list-style-type: none"> <li>➤ Access to public infrastructure</li> <li>➤ Access to money/capital; technology; labour and other resources</li> <li>➤ Crime</li> <li>➤ Health</li> <li>➤ Culture</li> <li>➤ Role models</li> </ul>	Previous Experience factors <ul style="list-style-type: none"> <li>➤ Education</li> <li>➤ Training</li> <li>➤ Work experience</li> <li>➤ Business ownership</li> <li>➤ Industry specific</li> </ul>
Market Opportunity factors <ul style="list-style-type: none"> <li>➤ Demand for supply</li> <li>➤ Competition</li> <li>➤ Access to markets; local and international</li> <li>➤ Location</li> <li>➤ Market uncertainty</li> </ul>	Human Capital factors <ul style="list-style-type: none"> <li>➤ Personal characteristics</li> <li>➤ Capabilities</li> <li>➤ Abilities</li> <li>➤ Skills</li> <li>➤ Knowledge</li> </ul>

□

**Source: Kunene (2008)**

From the table above it can be seen that exogenous factors have a fundamental impact on the performance of SMEs in South Africa. For instance, the rate of interest, the exchange rate, the unemployment rate, the rule of law, the state of social amenities, access to capital, as well as the geographic distance to markets impacts on the level of performance of the JSE’s AltX listed firms (DSBD, 2020abc; Jackson, 2020; SEDA, 2020). Apart from these exogenous factors, the growth and how successful an SME is also depends on endogenous factors too (Deakins and Freel, 2012; DSBD, 2020abc; SEDA, 2020). Issues such as product design, management structure, export strategy and the product marketing plans of a firm are intrinsically linked to the FSAs possessed by an SME. Kunene (2008) emphasises that access to resources including inputs, labour, procurement contracts, subcontractors, expertise, networks, capital and financing positively influences South Africa’s SMEs. Taken together, these factors increase the level of performance and chances of survival of South African SMEs when compared to their Sub-Saharan African counterparts. Similarly, South Africa’s low enterprise density creates room for SME expansion, and acts as a disincentive for firms to exit due to the unsaturation of the local market. Thus, this ongoing trend slows the competitive and transformative force of creative destruction in the productive sector of the economy (Schumpeter, 2013). Also, low interest rates in the country help to facilitate access to capital and resources at relatively cheaper rates than other

African countries (National Credit Regulator, 2011). Hence, most South African SME products and services are highly sought after in Africa due to their low cost when compared to the expensive host country products and services in these countries. Obviously, the African Continental Free Trade Area (AfCFTA) will expand and deepen the market for South African SMEs that can courageously explore and benefit from the first mover advantage that being a part of the largest free-trade area in the world offers.

Furthermore, the weak rand makes exports cheaper for local SMEs (Accéntuate, 2015). Besides, South African SMEs are better positioned to deal with change and adaptability across the continent more than foreign companies and competitors. Whereas, most African countries have a hostile environment, South African SMEs benefit from readily available legal, banking, supply, accounting and insurance industry that are eager to consummate transactions which improve the value chain and uplift the economy (Miller, and Kim, 2017; Herrington and Kew, 2018; Bosma and Kelley, 2019). In addition, many of the continent's SMEs are adversely affected by regulatory constraints which stifle entrepreneurship and increase the costs of doing business, which is unlike what occurs in the country (World Economic Forum, 2017). On top of that South Africa's SMEs benefit from the government's support programmes and financial assistance. This ensures that local SMEs survive beyond the start-up and incubation phase (Herrington, Kew, and Mwanga, 2017; Bosma et al. 2020). While political instability, unrest and war is common across the continent, South Africa have enjoyed decades of democratic transition, which has created an enabling environment for peace and entrepreneurship.

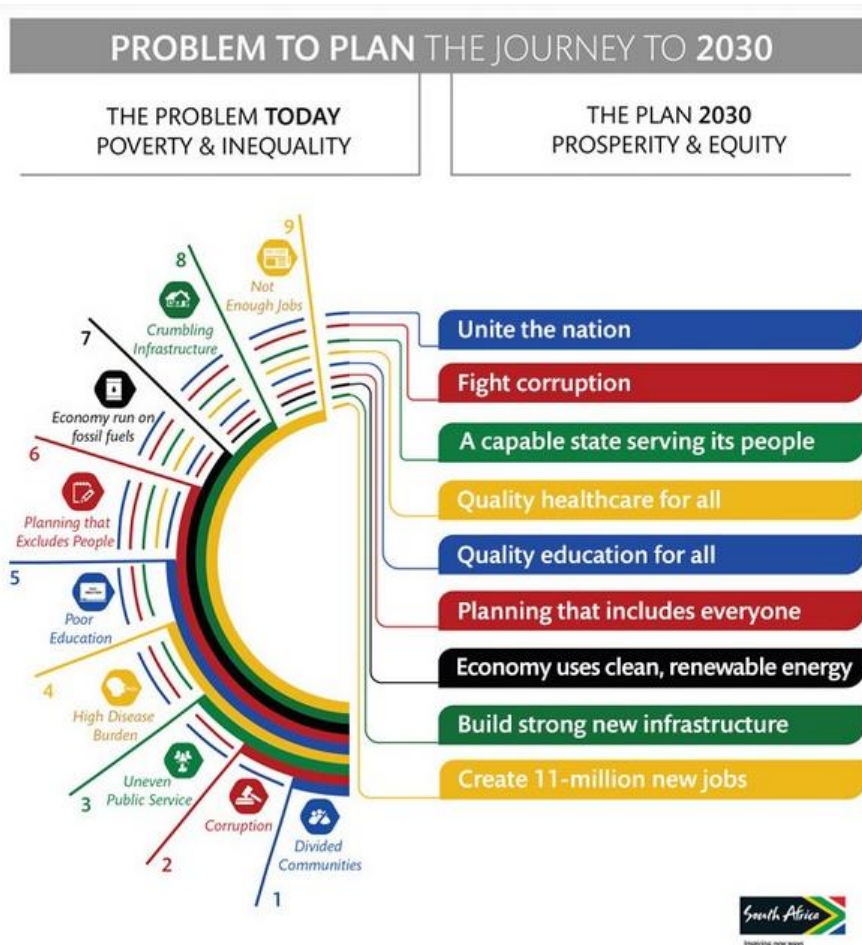
Relatedly, firm-specific factors such as SME demographics positively impacts on South African small businesses (Kunene, 2008). Evidences from prior research identifies that the size of firms yield some muscular effect that make them too big to fail due to the age of such firms and their level of experience. Also, the organisational structure of South African SMEs and their community networks, as well as the impact of their CSR contribution to environmental sustainability offers them a competitive edge over other sub-Saharan SMEs (Accéntuate, 2015; Gold Brands Investments, 2016). Likewise, South Africa's SME's products and services are world class, which makes them to gain a competitive advantage over their rivals. Apart from these factors, South Africa's SMEs have available in their economy top notch human capital that have the right attitudes, commitment, values, knowledge, experience, education, capability, skills and abilities that help small businesses to succeed. In other African countries, most staffs of firms are redundant and have charlatan attitudes to work, hence make them more prone to failure, because they are not sufficiently endowed with the requisite human resources to execute company strategies (Herrington, Kew, and Mwanga, 2017). Moreover, South

African SMEs are positively impacted by their location in a high-income developing economy that is identical to other achieving societies, whose diversity, tolerance of ambiguity, and opportunity alertness creates room for SMEs to thrive (Herrington and Kew, 2018; Bosma and Kelley, 2019; Bosma et al. 2020).

Moreover, South African SMEs have remarkable business management skills, customer service skills, negotiation skills, marketing skills, as well as a huge logistics and distribution network (Kunene, 2008). Additionally, efficient business systems and process skills, improve the agility of these firms. Consequently, South African SMEs are more alert to opportunity recognition and profitable exploitation both at home and overseas. According to the National Credit Regulator (2011) there is a consensus among business experts that South African SMEs as the main drivers of the economy can even play a more dynamic role in developing Africa's industrial capacity. This could lead to job creation, increased production and export-oriented entrepreneurship. However, most of these firms need to be adequately funded, so that they can expand their operational capabilities across national frontiers. Reginald and Millicent (2014) study of African descent foreign owned SMEs in the Eastern Cape Province of the South Africa emphasises that the business climate of the nation is sprouting these firms. Citizens/firms of Somalian, Nigerian, Ethiopian and Zimbabwean heritage whose national currencies have weakened overtime are attracted by the strength of the rand, the availability of resources and distribution network that is exist in the country. Furthermore, the excellent infrastructure of this country is an irresistible attraction for cost conscious SMEs (Bosma et al. 2020).

### **3.5.2 GOVERNMENT INTERVENTION IN SOUTH AFRICA'S SME SECTOR**

In line with the NDP vision 2030 agenda, the government of South Africa has intervened significantly in the SME sector. This programme is based on the target to reduce unemployment rate by 6 per cent and create 11 million more jobs by 2030 (Fin24, 2015a). The goal is that South Africans can unite, grow an inclusive economy, eliminate poverty and reduce inequality by the year 2030. Also, a fundamental part of the vision 2030 agenda is that there is need for an action-oriented plan to unleash the energies of South Africans citizens and also build their capabilities. According to Alexander (2017) after extensive research and robust debate throughout the country, the NPC diagnostic report identified four thematic areas: rural economy, social protection, regional and world affairs, and community safety. Consequently, the Medium Term Strategic Framework (MTSF) 2014 to 2019 is being used to forge a gradual implementation of this plan. But first and foremost, the MTSF will pragmatically focus on the main priority areas that need urgent attention.



**Figure 3.4: South Africa’s Analytic NDP 2030 (Source: Alexander, 2017)**

From Figure 3.4 the diagnostic report of the NDP transposes South Africa’s societal problems towards a path of prosperity, equity and growth. However, most of the wicked problems such as insufficient jobs, divided communities, non-inclusive planning, poor education, crumbling health and physical infrastructure can be solved by the creation of private sector jobs that are driven by SMEs. According to Fin24 (2015a) in order to meet the NDP’s target of creating 11 million jobs by 2030, South Africa needs about 49,000 SMEs growing at a rate of 20 per cent per annum. While about 8.2 million SMMEs is required to create an equivalent number of jobs. It is therefore clearly articulated that only sustainable and scalable SMEs can effectively assist in reducing the problem of high and persistent unemployment in South Africa (Deakins and Freel, 2012; Herrington and Kew, 2018; Bosma et al. 2020). Also, evidence from prior research on South Africa reveals that job creation leads to income generation, better education, access to healthcare and declining levels of corruption (Herrington, Kew and Mwanga, 2017). So, considering their importance, the under listed government departments and agencies were setup by the ANC-led government to facilitate the propagation of SMEs across the country.

### **3.5.2.1 THE DEPARTMENT OF SMALL BUSINESS DEVELOPMENT INTERVENTION IN THE SME SECTOR**

The DSBD (2016) points out that its primary mandate is to intervene in the SMME sector, because small businesses can contribute significantly towards the growth of the country's GDP. More so, the establishment of this department demonstrates government's commitment towards placing SMMEs and co-operatives at the centre of the nation's economic growth programmes, as well as other net job creation schemes. Recent GDP statistics indicate that the country is technically in a recession, thus it becomes imperative to pursue an expansionary fiscal and monetary policy (SBI, 2020; SEDA, 2020). In 2016, the DSBD disbursed R17.9 million in funding to 61 youth-owned enterprises via the Cooperatives Incentive Scheme. Also, the DSBD supported 117 women-owned enterprises with R35.9 million, and also disbursed a further R45.2 million in funding to 325 women-owned enterprises through the Black Business Supplier Development Programme (DSBD, 2016). While in 2019 this figure almost doubled, since the DSBD disbursed R182 million to black-owned SMMEs, R24 million to township-based SMMEs, R71 million to women-owned SMMEs, and R40 million to youth-owned enterprises (SBI, 2020). Besides, the department does not give only cash support, they also provide a bouquet of services which includes business consultancy, entrepreneurial training and networking. This is because most SMEs do not have the capacity to undertake large transactions despite the availability of funds, so there is need to provide them with a development process that can act as a form of incubator while these firms grow from small to large firms. Consequently, the DSBD has launched and adopted three flagship programmes, namely; The New Generation; Cooperatives Programme; and the National Gazelles Programme, in order to aid and support SMEs in the country (DSBD, 2016). That said, the introduction of an online portal by the department and FinFind is rapidly facilitating enterprise finance, and also providing related mentorship support for SMEs, notwithstanding the location of any small business in South Africa.

In like manner, the department intends to focus on offering continuous support to the small business sector through the development of new and innovative programmes (Herrington, Kew and Mwanga, 2017). More specifically, it is intended that this would strategically incentivise and promote numerous township and rural enterprises, women, youth and people with disabilities into the mainstream of the DSBD's financial and non-financial support agenda. During the 2016 financial year, the DSBD concurrently supported 238 cooperative enterprises, 620 SMMEs and 1,037 informal businesses. Over the MTSF 2019-2024 period, the DSBD intends to scale-up its assistance to SMMEs (comprising of women, youth and persons with disabilities firms), co-operatives, village and township ventures via the development of 270

incubation/digital hubs in remote areas that would support about 1.5 million small businesses (DSBD, 2020abc). Furthermore, on a macro scale, the DSBD is also rolling out a red-tape reduction guideline programme, in order to improve the ease of doing business and reduce the cost of doing business in South Africa.

Among the DSBD's intervention programmes the National Gazelles acceleration Programme seems to be the most ambitious that stands out from the rest. Of fundamental importance is its focus on identifying and nurturing high-performing SMEs. It is anticipated that this programme would create employment particularly for black-owned, innovative value-adding and manufacturing-focused enterprises that requires skilled workers and managers. So far, 200 National Gazelles cut across the manufacturing sector, ICT, energy, health, boy-sciences and the green economy are receiving intensive business support nationwide (Acs and Mueller, 2008; DSBD, 2016). SMEs that are listed on the JSE's AltX or intends to list later on can therefore tap from the opportunities that are provided by this programme. In order to counteract the impact of the COVID-19 pandemic the DSBD (2020c) is cushioning its effect on SMMEs through special intervention programmes such as the Business Growth and Resilience Facility; Spaza Shop Support Programme, SMME Relief Finance Scheme and sefa-Debt Restructuring Facility; Small Scale and Micro Clothing, Textile and Leather Business Support Scheme; Automotive Aftermarkets Support Scheme; Small Scale Bakeries and Confectioneries Business Support Scheme, amongst others. The DSBD is also improving the competitiveness of SMEs, and increasing their market access through the leveraging of both the public and private procurement process to boost their performance. Hence, the DSBD is vigorously promoting entrepreneurship, and developing small businesses, as well as advancing the localisation of SMEs nationwide.

As earlier stated, South Africa's SMEs representing 98 per cent of small businesses across the country, employs 47 per cent of the workforce and contributes to 42 per cent of the GDP. According to the DSBD (2020b) the SMME sector employs about 10.8 million persons in South Africa, which accounts for 66% of all jobs (i.e. approximately 16.5 million) in the country. A critical review of the activity of DSBD shows that its main achievement is the establishment of co-location points (in partnership with both national and provincial agencies) across the country (DSBD, 2016). More so, the DSBD has been able to establish Centres for Entrepreneurship at Technical and Vocational Education Training Colleges (TVET), where entrepreneurial skills have been impacted on over 150 beneficiaries. Likewise, 1,037 informal traders have been trained and equipped with tools to carry on their businesses. Besides, the DSBD's market access support programmes and sponsorship of



trade fair trips for SMEs have helped to create a high-profile brand image/awareness for small businesses. Additionally, the introduction of an enterprise development fund, franchising programme, Shared Economic Infrastructure Facility (Seif), and the Bavumile Skills Development Scheme women's empowerment scheme is a positive development in this sector. Similarly, the Mass Youth Enterprise Creation Programme, Youth Black Business Supplier Development Programme (YBBSDP), and Women Business Development Scheme (WBDS) are all plausible developments in this sector. However, because there are restrictions in financial and non-financial activities under the direction of the department, there is need to review the following two agencies under the DSBD.

- (1) The Small Enterprise Development Agency:** The Small Enterprise Development Agency (SEDA) was established in 2004. This was an offshoot of the merger between the Ntsika Enterprise Promotion Agency, National Manufacturing Advisory Centre (NAMAC) and the Community Public Private Partnership Programme (CPPP). Later on, The GODISA Trust and the Technology Programmes were integrated into SEDA in 2006, becoming Seda Technology Programme (Stp). SEDA's mandate is to design, nurture, develop, support, promote and implement government's SME strategy, as well as to integrate all government-funded small enterprise support agencies (SEDA, 2016a). This ensures that SME growth and sustainability is at the forefront of government policy, in line with the NDP/global best practices. According to SEDA (2019) it has also been mandated by the government to provide customised non-financial business support services that drives business growth and sustainability in collaboration with other clustered support role players which can be either private, public or multilateral agencies. With a national outreach of 53 branches, 17 information kiosks, 74 outreach offices and 76 incubation centres SEDA has been able to expend R1.75 billion to support clients, SMMEs and co-operatives across the country. In total about 135,000 clients were supported with entrepreneurship training, diagnostic assessments, and quality interventions at various innovation and incubation centres nationwide.

Furthermore, the SEDA has been able to improve the business incubator ecosystem in South Africa, as well as facilitate the growth of many National Gazelles (Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018). Likewise, it has been able to turn informal businesses into formalised entities as evidenced by the filling of 1,800 tax returns by SMEs in 2016. More so, its supported incubators increased to 57 resulting in thousands of jobs being created nationwide,

while the number of primary and secondary co-operatives increased to 206. More so, SEDA's business advisory service have facilitated an improvement of the quality and standard of SME products and services, through technology transfer, supplier development, business mentorship/coaching, export readiness development, as well as other customised SME support interventions (SEDA, 2016ab). The Basic Entrepreneurial Skills Development (BESD) programme, the partnership on cost-sharing programme, its one-stop shops, CPPP and co-location programme has been very successful, hence, the JSE's AltX registered firms are expected to leverage on these programmes were applicable. Lastly, SEDA partners including the European Union (via its SME Fund) were able to commit billions of rand during the immediate past reporting period, which emphasises the level of value-added impact that SEDA is generating across the country.

- (2) Small Enterprise Finance Agency:** According to Herrington, Kew and Mwanga (2017) many SMEs in the country fail due to the lack capital to finance the operational costs of doing business. Hence, the Small Enterprise Finance Agency (SEFA) was created in 2012 to cater for the financial needs of small businesses, and to provide a simplified access to capital for SMMEs/co-operatives in an efficient and sustainable manner (SEFA, 2016). Furthermore, it is a wholly owned subsidiary of the Industrial Development Corporation Limited (IDC) of South Africa. As a fundamental part of its core function, the SEFA provides credit guarantees and partnerships that ensure that both financial intermediaries and SMEs are effectively linked together in the wealth creation process. Consequently, it has fostered the establishment, survival and growth of many South African SMEs. SEFA therefore contributes directly to poverty alleviation, income redistribution and the engagement of idle citizens. Between the years 2012 to 2016 SEFA disbursed R3.2 billion to about 200,000 SMMEs and cooperatives, which in turn have created about 300,000 formal and informal sector jobs nationally. Besides, the Direct Lending activities of this agency is supporting B-BBEE procurement, and also, improving black industrialists and youth propelled enterprises' operational capabilities. According to SEFA (2019) in line with its mandate the agency disbursed about R1.2 billion wholesale and direct lending credit facilities valued between R500 to R5-million to about 73,000 SMMEs and co-operatives in the current financial year. SEFA is also offering a COVID-19 response plan including an SMME debt relief finance scheme and a business growth/resilience facility in order to ameliorate the impact of the pandemic on SMMEs in South Africa. Thus, numerous start-ups and

SMEs have benefited immensely from the life-line support that SEFA provides to small businesses in South Africa (Siwela, 2020).

### **3.5.2.2 THE DEPARTMENT OF TRADE AND INDUSTRY INTERVENTION IN THE SME SECTOR**

Numerous research studies centred on South Africa's macro-economic development and industrial competitiveness have always discussed/recognised the impact of the intervention of the Department of Trade and Industry (DTI) on economic inclusion, growth and development. This is because the DTI is saddled with the responsibility of setting both the commercial and industrial policy of the nation. Besides promoting radical structural transformation that broadens economic participation in the country, the DTI ensures that there is a conducive environment for investment, trade and enterprise development to take place nationwide (DTI, 2017). On a macro scale, the DTI is promoting the long-term industrialisation and diversification of the economy, concentrating in manufacturing utilisation and production in value-added sectors, where there is huge demand for labour for erstwhile disadvantaged communities. Thus, the DTI complements the activities of the DSBD. Furthermore, the DTI promotes foreign direct investment, as well as initiate equitable spatial and industrial development across the country via several programmes such as the Export Marketing and Investment Assistance incentive, the Agro-Processing Support Scheme (APSS) and the Black Industrialists Scheme (BIS), Special Economic Zones (SEZ), and the Global Business Services (GBS) incentive. Interestingly, these incentives are administered through the DTI's Industrial Financing Division (IFD) whose actual disbursement of R41.4 billion in the past financial year includes investments that leverage on private investment, expands infrastructure, grow market access and exports for South African businesses locally, continentally and internationally (DTI, 2019). Similarly, more than 82% of the DTI's projects are B-BBEE level 1-4 compliant, thus promoting black, youth, women and disabled persons entrepreneurship simultaneously. In fact, the DTI has helped to save about 38,366 current jobs and assisted in the creation of 29,735 new jobs various sectors of the South African economy. SMEs intending to list or that are listed on the JSE's AltX should therefore consider the incentives on offer from the DTI while building their optimal portfolio of financial capital investments.

Furthermore, its inclusivity agenda via the Black Industrialists Programme (BIP) was able to successfully leverage on a R3 billion investment in 2017 and a R5.1 billion investment in 2019 to create 12,000 jobs (DTI, 2017; DTI, 2019). Likewise, the DTI's support for the automotive sector attracted FDI of R11 billion from the Beijing Automobile International Corporation investment in the Coega Industrial Development Zone. This would lead to the establishment of a 50,000-

unit auto assembly plant that generates approximately 2,500 new jobs (DTI, 2017). Similarly, Mondi Zimele, which is an enterprise development company having participated in the DTI's incubator programme for its emerging forestry contractors was able to secure about R7.5 million in funding that led to the creation of about 2,100 new jobs in the packaging and paper value-chain sector (DTI, 2019). Not resting on its oars, the DTI is accelerating the pace of the implementation of multilateral, tripartite and continental free trade agreements, in order to ensure a coordinated and responsible approach to many South Africa's companies' operation overseas. Although, the DTI has 13 agencies that operate as public entities under its management, 6 of them are of significant importance to small business owners. Hence, are discussed below:

**(a) Export Credit Insurance Corporation of South Africa:** Since its inception in 2001, the Export Credit Insurance Corporation of South Africa (ECIC) has been assisting businesses across the country to facilitate international trade through the provision of both commercial and political risk insurance to exporters of capital goods and related services (ECIC, 2017). Despite being a public insurer, the ECIC is a self-sustained, state-owned national export credit agency. Besides, the ECIC uses prudential enterprise risk management and risk governance to achieve its mission driven objectives. Distance barriers have led to the concentration of several South African companies on the continent, where there is considerable risk (especially political risks) that cannot be underwritten by existing insurers. Therefore, guarantees provided by the ECIC ensures that these firms are less concerned about the risk profiles of their host countries due to the support that they can access over a medium to long term period. In addition, a fundamental part of the mandate of the ECIC is to ensure that South African exporters attract sufficient foreign buyers. Hence, this public insurer secures FDI for the country, and in the process stimulates economic growth, as well as protects local jobs. With total financial assets of R7 billion and total insured value of R30 billion, the ECIC is solidly ready to support South African businesses that might want to tap from the enormous opportunities which AfCFTA offers – being a US\$3.3 trillion dollar customs union with about 1.2 billion inhabitants (ECIC, 2019). Obviously, the main achievement of the ECIC is its spend on SMMEs (especially B-BBEE enterprises) amounting to about R91 billion in the 2016/17 financial year (ECIC, 2017). The public insurer is also important because it efficiently manages the country's risks by underwriting the investment and operational risks profiles of South African exporters, especially during very turbulent periods like during the COVID-19 pandemic lockdown when the value of various national currencies were depreciating across the continent. Similarly, its small and medium

transactions program can be used to support the JSE's AltX listed firm's transactions that covers underwriting and exposure levels of between US\$1 million to US\$20 million.

**(b) National Empowerment Fund:** The National Empowerment Fund (NEF) was established in 1998 to redress the impact of the apartheid legacy on the South African economy. Its mandate is to drive, promote and facilitate black economic participation as emphasised in the B-BBEE document (NEF, 2017). Hence, the NEF provides both financial and non-financial support to black empowered businesses through its asset management, fund management and strategic projects funding for SMMEs. This ensures that blacks can foster a culture of savings, shareholding, and investments, using the vehicle of project finance, venture capital finance, private equity funding for qualified start-ups, expansion, and for equity transformation purposes (Global Entrepreneurship Monitor, 2017). From its empowerment dividend, the NEF has assisted 927 black-empowered businesses with about R10.61 billion, creating approximately 100,302 jobs in the process (NEF, 2019). Likewise, its strategic project funds has a robust portfolio of about R30 billion, with about 26 per cent of this fund dedicated to black disadvantaged women entrepreneurs.

Furthermore, its incubatorship and post investment and mentorship support schemes are yielding a positive impact on various communities across the country. According to the NEF (2017) South Africa is confronted by the challenge of market failure due to the limited access to capital, low level of managerial skills and expertise, as well as the lack of business documentation and plans, which necessitates the agency to provide financial and non-financial business support for black businesses. Evidence from the recent comparative analysis report of South Africa by the World Economic Forum's (2017: 6) Inclusive Development Index (IDI) indicates that its significantly low GDP per capita performance on the IDI when compared to other countries with similar profile, shows that the country's growth has not translated into inclusive social economic progress. However, despite this hindrance, the NEF is proffering reliable solutions that can assist black businesses to succeed against all odds via online platforms and increased funding programmes such as the Women Empowerment Fund, iMbewu Fund, uMnotho Fund, Rural and Community Development Fund, Strategic Projects Fund, Arts and Culture Venture Capital Fund, and Tourism Transformation Fund (NEF, 2019). Black entrepreneurs/founders/business owners can take advantage of the NEF to finance their businesses from inception, growth to maturity,

especially with respect to securing substantial resources to list on the JSE's AltX.

**(c) National Credit Regulator:** The National Credit Regulator (NCR) is a creation of the National Credit Act 34 of 2005. Based on this Act, the NCR is the principal regulator who is responsible for the regulation of the South African credit industry. This agency encourages financial inclusion through the provision of increased access to the financial market of the erstwhile excluded segment of the society comprising of disadvantaged persons, low-income persons, and remote communities (NCR, 2016). Many research studies have observed that the GCI ranking for South Africa declined from 47 – 61 due to financial market inefficiency, forcing a lower rating after four years of improvement in its institutions pillar (World Economic Forum, 2017). Numerous SMEs in South Africa have failed due to this problematic factor, which is fuelling a sluggish economy (National Credit Regulator, 2011). Sadly, recent data indicates that 10.15 million out of the total 25.70 million (39.48%) credit-active consumers in South Africa are in financial distress (NCR, 2019). This present status quo stifles entrepreneurship because the credit rating of 1 out of 3 South Africans is bad, hence, many persons would not be able to access credit facilities either to start or expand a business, unless a drastic solution is implemented nationwide.

In order to improve financial sector independence and encourage the non-exploitation of customers, the NCR carries out routine credit education, debt counselling, research, policy development, timeous registration of industry participants, detailed investigation of complaints, and ensure the prompt enforcement of compliance according to its enabling Act. Recent regulation and amendments to the National Credit Act is offering greater protection for over-indebted consumers, thus freeing up cash for both entrepreneurial and investment opportunities in the country (NCR, 2016). Improved credit would certainly trigger an acceleration of the pace of industrial performance and growth, as well as activate increased innovation, dynamism and competitiveness nationwide. Consequently, the total consumer credit figure of R1.88 trillion in the first quarter of 2019, increased due to rising consumer credit lending and mortgages (NCR, 2019). This will definitely trigger an investment boom in South Africa that can kick start economic transformation, growth and development, especially in the SME sector.

**(d) Companies and Intellectual Property Commission:** The Companies and Intellectual Property Commission (CIPC) was established in 2011 following the merger of the Companies and Intellectual Property

Registration Office (CIPRO) and the Office of Company and Intellectual Property Enforcement (OCIPE). The CIPC is mandated to register companies, cooperatives and intellectual property rights such as trademarks, patents, designs and copyright, and its maintenance thereof (CIPC, 2017). Also, the CIPC maintains the disclosure of information that is contained in its business register, monitors compliance with and contraventions of financial reporting standards, as well as the licensing of business rescue practitioners. Prior to the merger of this commission, the activities of its constituent units were marked by delays, inefficiency and backlogs due to organisational bottlenecks and administrative failures. Likewise, its automated web interface encountered problems of trust due to its dysfunctionality, following concerns of a porous architecture that could jeopardise confidential client information.

In a bid to improve the ease of doing business in South Africa and move up the GCI ranking (World Economic Forum, 2017), the CIPC has significantly reformed itself, in line with global best practices. Hence, this will drastically advance formal economic participation and investment in South Africa over a medium to long-term period. More so, investments in process improvements and seamless online company registration have shortened the turnaround time to 1 day to register a company, and just 2 days to register a cooperative. While, the electronic submission of annual financial statements helped to improve the reports in the CIPC registry, and also raise tax revenue for the government. Taken together, the CIPC's drive towards automation is revolutionising the way clients establish and run their businesses, while, its collaboration and partnership with other agencies and entities like the JSE is aiding the development of the South African economy. Furthermore, its partnership with the big four banks and the Third Party Model is encouraging instantaneous transactions and verification, as well as increasing client accessibility irrespective of their location. Consequently, company registrations have increased from 27,358 registered in 2008/09 to about 395,320 in the 2018/19 reporting year (CIPC, 2017; 2019). Correspondingly, trademarks applications have increased to 39,136, and many clients have keyed into the automated changes of company directors, company address, appointment, as well as the resignation of key company personnel such as auditors, accounting officers and company secretary. In addition to the licensing and appointment of business rescue practitioners on their portal, which makes it easy to do business.

**(e) South African Bureau of Standards:** The South African Bureau of Standards (SABS) is the standardisation, quality assurance and

accreditation agency saddled with the mandate to develop, promote and maintain standards, and quality in the production of goods and services across the country (SABS, 2017). Its enabling legislation is the Standards Act, 1945 (Act No. 24 of 1945) as amended by the Standards Act, 2008 (Act No. 29 of 2008). Intense global competition has enhanced the role of quality and standards in trade. South African SMEs are therefore expected to develop top-notch products and services, while ensuring that their pricing and demand can outweigh supply costs in relation to similar products in other countries. This critical factor has created wicked problems and opportunities that is now shifting the focus of small businesses towards Africa (since AfCFTA is now being implemented) and other emerging markets. Furthermore, the SABS also protects the local industry from cheap imports that are of considerable low quality. Although, the South Africa seems to be declining in its former areas of strength, the government's policy intervention programmes are yielding positive results. This is because South Africa is improving significantly in red spots such as business sophistication and innovation (World Economic Forum, 2017). In fact, many South African company's products and services when exported are comparatively of a higher standard than the host country's own products/services.

Obviously, SABS appreciates that quality services and products are the key differentiator in an increasingly competitive environment, hence it strives to ensure that high quality standards are implemented nationwide. During this review period, the SABS Design Institute used proven design value chain training to coach and provide conformity assessment support for 101 SMMEs and 89 design innovator/entrepreneurs (SABS, 2019). It is expected that this training would translate to the implementation of proven standardisation and design processes by SMMEs in the country. Despite the high standards of SABS, it also undergoes periodic accreditation by both local and international bodies such as South African National Accreditation Systems (SANAS), RvA, The Netherlands and VDA, Germany (SABS, 2017; 2019). Thus, there is also need to train-the-trainers in line with contemporary international standards, which has led to the training of its staff in China and Korea. From available data, the SABS prerogative as the standard bearer would strongly support the growth and development of the SMME sector in South Africans, and assist in creating jobs across racial divide in the long run.

- (f) **South African National Accreditation Systems:** The history of the South African National Accreditation Systems (SANAS) can be traced to 1980 when its predecessor agency, the National Calibration Service



(NCS) was formed. Later on, the NCS assumed the name National Laboratory Accreditation Service (NLA). However, in 1995 the NLA was renamed SANAS, which led to the promulgation of the Accreditation of Conformity Assessment Calibration and Good Laboratory Practices Act, 1996 (as amended by Act 19 of 2006). Consequently, the SANAS is the only national accreditation agency in South Africa that provides a globally recognised and effective accreditation, calibration, inspection, certification, and monitoring system in the country (SANAS, 2017). Furthermore, the SANAS helps in improving the quality control systems of SMEs, such that their products and services can meet high international standards. By setting and adopting very high standards the SANAS assists South African manufacturers and exporters to be able to sell their products and services across the region and continent, thereby fostering Africa's integration, socio-economic growth and development. Also, frequent manpower development training have led to the impartation of highly specialised knowledge base and competent skills base in the country. With the abolishment of apartheid numerous previously disadvantaged assessors are now being registered with SANAS, and many organisations have been accredited in the fields of testing and medical programmes too. Also, the SANAS as an entity for conformity assessment bodies blocks sub-standard products from being imported into the country (SANAS, 2019). More importantly, the SANAS ensures that the South African public consumes safe and healthy products, which are environmentally sustainable. In conclusion, the SANAS therefore facilitate the recognition, acceptance and export of Made in South Africa goods and services worldwide. Hence, it inadvertently safeguards brand loyalty towards South African goods and services, as well as assist in creating new jobs and sustaining existing ones, ultimately advancing the level of economic growth in the country.

### **3.5.2.3 THE DEPARTMENT OF SCIENCE AND TECHNOLOGY INTERVENTION IN THE SME SECTOR**

Based on the NDP, the Department of Science and Innovation (DSI) formerly known as the Department of Science and Technology (DST) is the government ministry with the exclusive mandate and responsibility to conduct scientific research using up-to-date technology and innovation that will assist in developing the economy of South Africa (DST, 2017; 2019). In addition, the cardinal focus of the DSI is now centred on the 4IR and its potential impact on the nation's economy. Its subsidiary, the Technology Innovation Agency (TIA), National Research Foundation (NRF), National Advisory Council on Innovation (NACI) and the Council for Scientific and Industrial Research (CSIR) as well as its other entities are at the forefront of promoting the development and

exploitation of discoveries, inventions, and innovations across the country. Furthermore, its priority focus on technology localisation is also helping SMEs to boost their manufacturing supplier base (Herrington, Kew and Mwanga, 2017). Apart from the conduct of cutting-edge R&D, the DSI builds the capacity and develops the skills of technicians, innovators and managers nationwide via concept development support, prototype building, as well as product/service commercialisation (DST, 2019). The JSE's AltX listed companies can partner with the DST in the development of pioneering products and services, which can be easily commercialised both locally and internationally.

In recent times, the TIA started using technology stations and platforms to ensure that R&D outputs are marketable in commercially viable scales by businesses operating in both the public and private sectors of the economy (TIA, 2016; 2019). The on-going success of these schemes has enabled the TIA to disburse over R1 billion in three years to about 2,600 seed fund projects, youth projects and SME assisted deals. More so, in furtherance of achieving the NDP target the TIA is encouraging the development of SMEs that use advanced manufacturing to make goods and services (Fin24, 2015ab; Alexander, 2017). The TIA performance from FY2010/11 to FY2016/17 reveal that over 205 innovation products were developed and 8,550 SMMEs were supported creating about 14,022 jobs in the process, while about R2.6 billion was disbursed to support the development of new technological innovations (TIA, 2019). Besides, the net impact of this funding resulted in a GDP contribution of about R4.8 billion to the South Africa economy. Lastly, the TIA has observed that there is also a major need to follow up on SME product life cycle from the proof-of-concept stage to product commercialisation. Hence, it plays the role of connector, active funder, facilitator and service provider for high-impact entrepreneurship in the country. Ultimately, the DSI believes that science, technology and innovation can spur economic growth and development in the country, as well as improve the quality of life of South Africans via business development, job creation, poverty reduction, and resource redistribution across the nation, especially to remote locations (DST, 2019).

#### **3.5.2.4 THE DEPARTMENT OF HUMAN SETTLEMENTS INTERVENTION IN THE SME SECTOR**

Standing on South Africa's Bill of Rights as enshrined in the 1996 constitution and the Freedom Charter, the Department of Human Settlements (DHS) is mandated to accelerate sustainable housing and urban development nationwide (DHS, 2019). The Breaking New Ground (BNG) policy of this department has led to the planning and implementation of projects, which serves as a catalyst for spatial transformation, equity and economic justice. In

the same vein, the development of quality human settlements is expected to generate job-induced growth and prioritise both women and youth owned businesses (Alexander, 2017; Herrington, Kew and Mwanga, 2017). Likewise, this department have galvanised the potential of a built environment incubatorship programme in order to help provide the institutional capacity to clear the backlog. Matter-of-factly, many SMEs are propping up as service providers nationwide, and also playing a prominent role in the human settlement value chain ecosystem in South Africa. Similarly, the Housing Development Agency (HDA), which is an organ of the DHS, has been able to address problems that are associated with land acquisition and assembly process. Before now, delays in acquiring land rights and title deeds were absolutely difficult, especially for investors (DHS, 2017). This endeavour is therefore yielding remarkable fruits having positioned the South African property market as the most innovative in the world having surpassed the MTSF target of 10,000 hectares. Listed AltX firms in the property/real estate sector are thus encourage to collaborate with the DHS, as well as its other entities in order to consolidate their businesses.

Moreover, numerous monitoring and evaluation reports have shown that South Africa's real estate and property sector is the most lucrative industry in the country. In fact, all companies that are listed on the JSE's AltX in this sector have out-performed other sectors in almost all areas, and are projected to graduate to the Main Board within a short time. Furthermore, many B-BBEE firms have benefited tremendously from this sector's national priority catalytic projects. Given the high level of inequality in South Africa, the National Housing Finance Corporation (NHFC) and the Rural Housing Loan Fund (RHLF) have been empowered to facilitate access to housing finance for low and middle-income earners in both rural and urban areas (NHFC, 2016; RHLF, 2017). According to the NHFC (2016) from 1994 till date about 4.3 million houses have been delivered to 20 million persons. As at 2019, the DHS confirms that it has reached its milestone target of 4.7 million homes (DHS, 2019). This has not only created business opportunities but have also enabled about 6 million African families to move into quality houses within this period. Without equivocation, the ANC led government have consistently performed better than the world average in the built industry. Hence, many South African firms using their core competencies (i.e. FSA) gained over the years are now able to exploit real estate opportunities in both Europe and America profitably. In conclusion, it can be deduced that government intervention in the SME sector through its departments and agencies has been absolutely impactful, and will in the long run assist in achieving the NDP 2030 projections (Alexander, 2017).

### 3.6 PROBLEMS CONFRONTING SMES IN SOUTH AFRICA

Despite the intervention of South Africa's government in the SME sector, it is nevertheless characterised by a myriad of problems (Herrington, Kew and Mwanga, 2017; Bosma et al. 2020). Like many African countries, poor infrastructural facilities like roads, railways and ports increase the cost of doing business in South Africa. Besides, the problem of low levels of GDP growth rate, high levels of business failure and closure, as well as the challenging and difficult economic environment has led to a decline in SME activities (World Economic Forum, 2017). Hence, there is a fundamental need to point out the impediments confronting SMEs, in order to discover ways of making them to flourish. According to SEDA (2016ab) these challenges cannot be ascribed to all firms, since some SMEs operating in a particular location or industry may be faced by distinct set of idiosyncratic factors. Thus, the following issues have been discretely identified because they hamper the progress of numerous small businesses in the country:

- **Lack of Access to Finance and Credit:** The findings of the latest GEM 2019/2020 global report reveals that the problem of lack of access to finance remain a significant constraint to entrepreneurship development globally (Bosma et al. 2020). According to Herrington, Kew and Mwanga (2017: 6) 50 per cent of South Africa's entrepreneurs discontinued their business because of this problem, when compared to the rest of Africa. Hence, financial constraints have a profound effect on business sustainability due to the increasing level of business sophistication and innovation that is required in this sector. As a result of the literature gap in this area, the focus of this research is on the impact that the JSE's AltX have on SME's performance and entrepreneurship levels in South Africa.

Given that South African banks' prudential risk profile assessment system, requires that they grant credit to only well established and viable businesses, where there is less exposure to default (Kim, 2011). Numerous new/existing firm loan request are most times rejected due to a myriad of issues/requirements like missing documentation, the need for guarantors/poor collateral, and bank lending limits to such businesses. Apart from the above-mentioned points, in South Africa, banks also consider distance factors as barriers to loan monitoring and management. Consequently, many banks tend to lend to companies whose location is in close proximity to their headquarters, for instance Gauteng and the North West provinces have higher lending rates to SMEs than Mpumalanga and the Northern Cape. According to the National Credit Regulator (2011) this problem is further aggravated by the lack of awareness about the procedures for getting loans, uneven distribution of credit centres, and

cumbersome documentation requirements. SME listing on the JSE's AltX can help to ameliorate this problem.

- **Inadequate Infrastructural facilities:** The lack of basic physical and organisational structures and facilities needed for the operation of either an enterprise or society is a key impediment to small businesses (Dana et al., 2018; Herrington and Kew, 2018). In fact, poor infrastructural facilities increase the cost of doing business and restrict the operational capabilities of SMEs (Deakins and Freel, 2012). Infrastructural facilities such as buildings, roads, power supply, internet connectivity, etc. are key enablers of business productivity and growth without which their scarcity would lead to factor cost increment (Miller and Kim, 2017; World Economic Forum, 2017; The Heritage Foundation, 2020). Recent literature studies on this phenomenon reveal that professional infrastructure such as engineering, accounting and legal services etc. are also important motivators for entrepreneurial success. In South Africa, developed metropolises like Johannesburg are known to have expensive property spaces, which increases the cost of rent. While in remote areas in the North West, poor and intermittent interruptions in electricity supply causes increments in the overhead costs of SMEs located in this area.
  
- **Macroeconomic risks:** The impact of a low GDP growth rate, rising public debt, high unemployment, interest and inflation rates have a negative effect on the level of savings, consumption, investment and international trade in South Africa (Fox and Liebenthal, 2006; Dana et al., 2018; Herrington and Kew, 2018). Also, the uncertain political environment implies that some business risks are uninsurable, just as there are no assurances of titles due to calls for land reform. Taken together, these issues may lead to delays in getting orders and permits for many businesses that operate in the country especially in the mining and agriculture sectors of the economy. Another notable impact of macroeconomic risks is price and foreign exchange volatility (Astoria, 2016). It has been observed that macroeconomic risks could trigger other transmission mechanism induced risks such as liquidity risk, capital and stock market portfolio risk etcetera (Herrington, Kew and Mwanga 2017; Bosma et al. 2020). More so, turbulent market dynamics can prove to be fatal for small businesses that lack the competitive edge, working capital and the ability to overcome periods of recession. In South Africa, the aftermath of the 2008 financial crises led to the closure of thousands of SMEs, whose market projections were further worsened by the entry of large foreign competitors (Alexander, 2017). Consequently, macroeconomic risks cause small businesses to have low sales margin, which result in cash illiquidity and ultimately lead to business failure.

- **Over-regulation and corruption:** According to Miller and Kim (2017) the diversification of South Africa's economy based on the NDP 2030 programme has been limited and uneven. This can be linked with persistent uncertainties surrounding government policies that restrict entrepreneurship and SME development (Bosma et al. 2020). Numerous small businesses complain about bureaucratic legislative requirements and empowerment frameworks that have been implemented nationwide. Without equivocation, the B-BBEE codes are viewed as a massive burden by small firms, since it requires enormous administrative time to comply with its requirements (Herrington, Kew and Mwanga, 2017; Herrington and Kew, 2018). So, there is need to waive SMEs from most parts of this scheme, since very few disadvantaged skilled workers can fill available vacancies. Going further, less government intervention and encroachment in the marketplace will definitely improve business freedom and openness, as well as build the trust levels required for the economy to grow – because they guarantee property rights. Likewise, most entrepreneurs' associate delays/difficulty in obtaining permit and licences to bureaucratic bottlenecks (World Economic Forum, 2017). And accusations of corruption and counteraccusation have weakened public trust, by severely undermining government integrity. Its exacerbation also exposes the judicial system to political interference, thus making property rights less protected and contracts insecure (Miller and Kim, 2017). This therefore becomes a negating factor that discourages entrepreneurs from taking risks, which can lead to the expansion of their businesses. The JSE's AltX listed firms are expected to use the capital raised on the lower bourse to expand to foreign markets where their products can be sold internationally, as well as diversify against country risks such as political and currency exchange risks.
  
- **High tax rate:** Although a high tax rate adds to the revenue base of a country, it could also kill small businesses that generate these levies (Bosma et al. 2020). Unlike big businesses that have the capacity to pay high taxes due to their enormous revenue potential, SMEs may not be able to recover from tax hikes because it weakens their cash flow (Alert Steel, 2013). Consequently, the government needs to give grants, tax amnesty, tax holidays and incentives to small businesses, in order to support them, until they mature (Financial Investment Advisory Service, 2007; SEDA, 2016ab). Numerous research studies indicate that most SMEs need on average a three year support period to enable them to meet their financial obligation, else, they would move quickly towards insolvency, failure and then liquidation (Dana et al., 2018; Herrington and Kew, 2018; Bosma et al. 2020).

- **Lack of innovativeness and low level R&D:** Due to the shortage of highly skilled managers, scientists and technicians in South Africa, most SMEs run brick-and-mortar businesses that lack innovation (Brooks, 2017; Dana et al., 2018; Herrington and Kew, 2018). To make matters worse, small businesses that are not creative, cannot induce and drive radical transformation across the globe. Consequently, their products and services are not acceptable across all frontiers of the marketplace, yield minute revenue and generate few jobs in the long run (Marks, 2012). Contemporary research on entrepreneurship reveals that innovative firms grow faster than traditional SMEs, and have the capacity to become born-global firms within three years (Lakew, 2015). Since South Africa is an efficiency-driven economy it will require an influx of high-end firms to transition into an innovation-driven economy that is synonymous with advanced economies worldwide.

In order for South Africa's SMEs to overcome their inferior competitive position in the global arena, there is need to create international linkages with established foreign firms, especially in terms of the formation of R&D corporation/partnerships through mergers and acquisitions, management buy-outs and joint venture agreements. Using the Chinese model of expansion, they can open R&D laboratories in advanced countries like USA, Germany, China, India, Japan, Korea etc. to exploit cost saving technology transfers, then later transition into OEMs, OBM and ODM companies, where brands are successfully explored, grown and refined overtime (Liu and Chakravarty, 2017). It took South African born Elon Musk's Tesla several attempts and billions of dollars to master the complex act of launching an Autonomous Spaceport Drone Ship (ASDS) called SpaceX Dragon cargo capsule to dock at the International Space Station – ISS (Vance, 2015). Many researchers have established a correlation between upward linkages between SMEs and larger firms with technology transfer, diffusion and assimilation. Thus, the government needs to ingeniously create incentive schemes for cross border R&D, in order to foster innovation; so that such linkages can be attracted, created and strengthened over time.

- **COVID-19 Pandemic:** According to the International Trade Centre (2020) the COVID-19 pandemic is an unprecedented global health crisis that has a great impact on economic activities worldwide. Consequently, world trade is expected to fall in 2020 by around 13-32 percentage points. It is anticipated that many SMEs would go bankrupt, resulting in significant job and income losses globally. A recent study on the impact of the pandemic on economic activities in South Africa reveal that 92 per cent of SME operations had been negatively affected by the crisis (Jackson, 2020). But

suggests that the digitisation of company operations through virtual orders and marketing, the provision of credit facilities, payment deferrals, government interventions via subsidies, loans and grants, as well as the acquisition of rental subsidies can assist in reducing the effect of the resultant lockdown. In order to curb job losses SMEs are advised to adopt teleworking, e-commerce and digital payments, teleconferencing, remote learning and online health service assistance to all their customers, clients, business partners and workers, as well as invest in digital skills development and information technology (IT) infrastructure that will support the new business ecosystem (Bosma et al. 2020). More so, SMEs listed on the JSE's AltX are encouraged to take advantage of the multitude of government intervention programmes mentioned earlier, so as to reduce the impact of the pandemic on their operations.

- **Miscellaneous problematic factors:** The challenges facing SMEs in South Africa are multifaceted. For instance, the nation has a pervasive crime and xenophobic problem that is gulping a significant chunk of small business funding (Alexander, 2017). This implies that few people would be willing to stake funds to operate small businesses because of the risky nature of such investment. Thus, increased security budget stifles SMEs, dampens investment confidence and increases the cost of doing business in South Africa. Moreover, poor infrastructural amenities in remote townships restrict many SMEs access to markets, which in turn has a negative multiplier effect on those businesses (as a going concern). According to Herrington, Kew and Mwangi (2017) extreme income inequality, poverty and unemployment weakens the internal demand for goods and services in South Africa. Therefore, most SMEs are forced to export to other countries were so many barriers to entry also confront them head-on.

### 3.7 SWOT ANALYSIS OF SOUTH AFRICA'S SMES

Previous sections of this chapter deliberated on the success factors and other sundry issues confronting SMEs in South Africa. Consequently, in this thesis it was considered imperative by the researcher that a SWOT analysis be conducted on SMEs operating in the country, in order to ascertain the true position of this sector in the economy (Konopik and Lindgren, 2010; Davis, 2013). Moreover, conducting a SWOT analysis establishes a matching scan of SMEs' resources and capabilities within both the local and global environment. Furthermore, the SWOT analysis framework is executed in such a way that an internal analysis scan comprises of both strengths (S) and weaknesses (W), while an external analytic scan is made up of both opportunities (O) and threats (T). Overall, all these indicators reveal that South Africa's SMEs are better



positioned to take advantage of existing opportunities in almost all sectors of the economy, including but not limited to Africa in general.

<p><b>S</b>trengths</p> <p>Market size Adaptation of new technologies Standardised production techniques Brand loyalty Diversity</p>	<p><b>W</b>eaknesses</p> <p>Inadequate R&amp;D Minimally innovative offering Poor financial outlay Shortage of skilled manpower Low risk business strategy</p>
<p><b>O</b>pportunities</p> <p>Very profitable African subsidiaries Hedged FDI potentials Rise of franchising networks Strategic alliances and acquisitions Low cost expansion capabilities</p>	<p><b>T</b>hreats</p> <p>Entry of foreign competitors Macroeconomic risks Over regulation and corruption High tax rate Changing tastes and preferences</p>

**Figure 3.5: SWOT Analysis for SMEs (Source: Authors' compilation)**

From Figure 3.5 above, the outcome of the SWOT analysis of SMEs operating in South Africa has been captured in detail. This indicates that the FSAs of SMEs in the country are a strong market size, a sophisticated technology-based business framework, and the use of standardised production techniques. Likewise, the demography of the nation exhibits diversity, unique selling points and brand loyalty from customers. However, despite the strengths possessed by South Africa's SMEs, a great deal of weaknesses is inherent in their operations. This triggers a kind of ellipses of spasm that needs to be quickly readdressed. Problems such as inadequate R&D causes minimally innovative product offering that cannot be sold globally by some ill-prepared SMEs in South Africa (Herrington, Kew and Mwangi 2017). Evidence from research associates these negating factors to a poor financial outlay, shortage of skilled manpower, as well as a low-risk business strategy that restricts investments in risky but profitable projects (Dana et al., 2018; Herrington and Kew, 2018; Bosma et al. 2020).

In the external environment, South Africa's SMEs benefits from tremendous opportunities like the low-cost expansion capabilities of its companies. Besides, due to the neglect of African markets because of its instability, South Africa's SMEs have been able to use their proprietary knowledge of Africa to establish very profitable subsidiaries across the continent (World Economic Forum, 2017). Similarly, many foreign investors view the nation's economy as the preferred investment destination; as such SMEs attract a huge chunk of FDI for the continent. Also, the rise of franchising networks enables the establishment of strategic alliances and acquisitions worldwide. Notwithstanding the positive outlook for small businesses in South Africa, SMEs face threats in all segments of the economy. This include the entry of large foreign competitors into the largely untapped African market, whose ability to offer cheaper and better

quality products and services is shrinking the revenue base of these firms. More so, macroeconomic risks are weighing down the potential of SMEs in this sector, coupled with the challenge of over regulation and corruption (Miller and Kim, 2017). Additionally, the tax liability of SMEs, and the changing tastes and preferences of Africans in favour of foreign goods and services is a major threat to the existence of South African SMEs operating on the continent.

### **3.8 THE WAY FORWARD**

As the most advanced economy on the continent, declining GDP growth rates implies that South Africa needs to ingeniously support the growth of SMEs because small businesses create jobs, agglomerate national production and manufacturing capabilities, and also assist in ameliorating the scourge of poverty in the country (Alexander, 2017). Likewise, it is important that government policy and regulation should be streamlined synergistically between the various departments and agencies of the country. This would in the end simplify the complex process of compliance when compared with the rapidly changing legislative environment in South Africa. Besides, in order for SMEs to thrive tax incentives needs to be put in place in very competitive sectors of the economy like tourism, agriculture and retail sales. Moreover, massive infrastructural spending by the government in partnership with private investors funding would propel the economy towards sustainable growth. Numerous research studies on SME development points to the fact that an alluring business environment facilitates commerce, especially with respect to the logistics aspect of trade, and also reduces the cost of doing business in the country (Herrington, Kew and Mwanga 2017; Dana et al., 2018; Herrington and Kew, 2018; Bosma et al. 2020). Furthermore, the aftermath of implementing a sustainable pre-condition for starting a new firm and improving the ease of doing business in South Africa is an increment in the number of firms transiting from informal to formal businesses (World Economic Forum, 2017). Consequently, more SMEs will be captured into the tax base. Although these firms would be paying slightly reduced taxes when compared to larger companies, a broad revenue base would definitely accelerate the GDP growth rate of the country.

In addition, as observed by Kim (2011) many African countries inadvertently impose harsh regulations on local SMEs, and indirectly encourage foreign owned companies when very bad policies are implemented by the government due to huge bribes being paid to corrupt government officials to enforce ruthless policies and laws. Hence, there is need to re-orientate the society on the need to make and buy local goods and services in the overall interest of the country, and also ensure that the judicial system enforce the rule of law in all corruption cases and property rights (Miller and Kim, 2017). Besides, innovation hubs, incubatorship and accelerator schemes should also be publicised and

promoted in order to attract potential entrepreneurs (SEDA, 2016ab; DTI, 2019; SEDA, 2019; DSBDabc, 2020). Likewise, there is need to provide a harmonised real-time online processing of loans services across all public and private financial establishments, so that SMEs can easily obtain funding when required. Similarly, issues such as the shortage of a skilled workforce that has sufficient know-how and proprietary knowledge to produce and manage a company's products and services can be solved by creating skills acquisition programmes, and opening R&D laboratories close to universities (DTI, 2017; 2019). By integrating businesses with research bodies, the town and gown can be effectively link together synergistically, in order to kick start an economic recovery/growth and development in South Africa, just like it is happening in the Silicon Valley in USA. Finally, South Africa's SMEs should be encouraged to pursue an aggressive strategy that would facilitate and ensure their listing on the JSE's AltX, where there are abundant opportunities to raise cheap capital for expansion.

### **3.9 CHAPTER SUMMARY**

This chapter focused on describing in detail the small business development environment in South Africa. The chapter begins with the definition of the term SME given the dichotomy (amongst scholars and countries) about the exact definition of this phenomenon. Later on, the various types of SMEs are deconstructed. Subsequently, the differences between the phenomenon known as entrepreneurship and the term SMEs are discussed, in order to provide a concise demarcation and also establish a relationship between these two phenomena. Furthermore, a cross-sectional study of SMEs in South Africa was carried out to establish the factors contributing to their success in South Africa. Given the existing gap in literature studies, the intervention programmes in the SME sector are reviewed to show the link between government assistance and SME development in South Africa. However, several limitations were observed to hinder SME development. Thus, the problems confronting SMEs in South Africa were critically reviewed, and from these challenges, the way forward for this sector is pointed out for onward implementation.

After carrying out a literature review on SME development, it was found that the small business environment determines the nature and characteristics of SMEs in a particular location. The research gaps identified (such as the lack of data on the impact of SME capital financing on a firm's business opening/closure and performance) inform the next chapter. Consequently, in the following chapter, a critical synopsis of the JSE's AltX will be carried out. In the first section, a brief summary of the activities of the JSE's AltX will be discussed based on the theoretical background and motivation of the study. This will usher in another discussion on the advantages of listing on the JSE's AltX. More

importantly, it will also discuss and determine the impact of listing (on the lower bourse) on SME's operation and expansion. Ultimately, the next chapter will also provide a contextual justification for the hypotheses that were developed for this study, and as a consequence, lead to the development of a theoretical model/conceptual framework for this study.

## **CHAPTER 4: A CRITICAL SYNOPSIS OF THE JSE'S ALT X**

### **4.1 INTRODUCTION**

The previous chapter emphatically described the small business development environment in South Africa. Building on the complexities of this phenomenon, this chapter presents a critical synopsis of the JSE's AltX by expounding in detail the activities of the lower bourse. Moreover, the nature of the JSE's AltX will be discussed, while a comparative review of the JSE and the AltX would also be comprehensively undertaken in this chapter. Furthermore, an analysis of the JSE's AltX impact on entrepreneurship will be carried out, followed by the junior bourse listed-SME's sector-by-sector impact analysis. Afterwards, the effect of firm listing on the AltX was examined – in relation to how it will be measured and catered for in the research methodology section. Finally, the theoretical model/operationalised conceptual framework for this study will be illustrated diagrammatically taking cognisance of the research problem, arguments, questions, objectives and hypotheses, which will be developed thereafter.

The purpose of this chapter is to conduct a literature review on the JSE's AltX, and also justify the need for listing more SMEs on the lower bourse. Besides, this chapter provides a theoretical framework for the study and justify the need for the hypotheses that were proposed for this study (in preparation for empirical testing). Consequently, this chapter identifies the main advantages of listing, as well as state in detail the impact that it has on SME operation and expansion. Furthermore, the aim of this chapter was to review the performance of the exchange, and also identify the risks confronting it. More so, the intent of this chapter is to contribute to new knowledge in this field of study, and ultimately develop the theoretical model of this study.

### **4.2 PRECURSORY CONTEXTUAL LITERATURE REVIEW**

Many research studies have acknowledged that there is ample evidence associating the impact of the activities of the entrepreneur who engages in entrepreneurship to small business development and national economic growth (Herrington, Kew and Kew, 2014; Valerio, Parton and Robb, 2014; Mazzucato, 2015; Dana et al. 2018, Bosma and Kelly, 2019). Entrepreneurs have been recognised as renowned innovators, planners and risk-takers, who identify and start business ventures, by sourcing, harnessing and organising the required resources, in order to reap the rewards associated with those projects (Shane and Nicolaou, 2013). The entrepreneur therefore, consciously achieves potential business success or failure by engaging in the entrepreneurial process. According to Schumpeter (2013) this gale of creative destruction is responsible for the dynamism of markets, industry and long-term economic growth. Thus, the direct result of entrepreneurship is an increment in the

formation, as well as the growth of SMEs within a country (Rugraff and Hansen, 2011; Aguilar, 2014; Nene, 2015; Bosma et al. 2020).

It has been recognised that the small business sector plays an important role in the economic and social development of a country (Financial Investment Advisory Service, 2007). However, due to the varying scale of small businesses, their existence can be influenced by either age or size. In fact, these firms could be privately owned corporations, partnerships, or sole proprietorships – which can be either franchise businesses or retailers' cooperative (Stokes and Wilson, 2010; Longenecker, Petty, Palich and Hoy, 2012; Hoang, 2014; Bosma and Kelly, 2019).

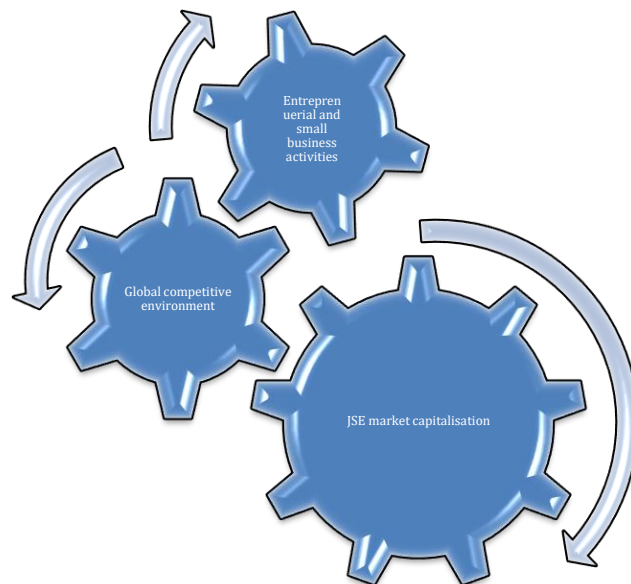
Jones (2011) posits that small businesses are generally recognised as important drivers of economic success, engendering them to intense scrutiny and public attention. Relatedly, Obama (2011) theorises that they are indeed the key ingredient in the ecology of firms in a healthy economy, as job creators, sales generators and a source of tax/fiscal revenue that supports productivity growth. According to Riley (2004:11) the creation and growth of new businesses contribute to the beneficial process of the productive churn within an economy. Many researchers such as Davis, Haltiwanger and Jarmin (2008), Stokes, Wilson and Mador (2010), and Lazear and Spletzer (2012) have observed that this phenomenon occurs when efficient new entrants to the market replace less efficient existing businesses. This is because such a firm uses new innovative ideas, technologies and products, and in the process create competition that eventually leads to increased levels of productivity and employment.

In South Africa, the importance of small businesses as creators of jobs, particularly for those with a low skill level, is widely recognised (Financial Investment Advisory Service, 2007; Accountancy SA, 2008; Endeavor, 2010; Junpath, 2013; Bosma and Kelley, 2019; Siwela, 2020). According to Smulders (2006) SMMEs contribute about 36.1% of South Africa's GDP and employ about 68.2% of the labour force in the private sector. Furthermore, it has been observed that SMMEs in the agriculture, construction and retail sectors employ more than 80% of the total workforce in this segment of the economy. Over the last few years, the growth in employment by SMMEs has exceeded the growth in their contribution to GDP. This comparative analysis underscores the job creation potential of this sector of the economy. Besides, one of the claimed advantages of small businesses is their ability to serve market niches not covered by mass production (Walczak and Voss, 2013).

Nevertheless, the major problem small start-up firms face is the dearth of capital. The findings of many research studies have concluded that most small businesses come into existence by owner self-financing through cash injection, equity loan on the entrepreneurs' home, and/or other assets. However, some studies find that seed capital have also been raised through loans from friends or relatives, grants from private foundations, personal savings, private stock issue, partnerships, angel investors, banks, SMME finance, including collateral-based lending and Venture capital (Clark, 2014). Unfortunately, some small

businesses with sound business venture plans, have been financed through credit card debt—which is a poor choice, given that the interest rate on credit cards is often several times the rate that would be paid on a line of credit or bank loan. Yet, raising capital finance through shareholding remains the cheapest form of equity financing, but has been extensively underutilised by many small businesses in South Africa.

Figure 4.1 below illustrates the major variables that influence South Africa’s GDP. Although the JSE market capitalisation greatly influences the direction of the economy, it has been observed that the global competitive environment critically affects the scale of such change. And that entrepreneurial and small business activities help to act as a cushion against detrimental factors resulting from the interaction of the local businesses with foreign markets (Qaqaya and Lipimile, 2008; Eurofound, 2012; Office of the Director of National Intelligence, 2013).



**Figure 4.1: South Africa’s GDP interaction indices (Source: Author)**

In this study, the definition of Gilson and Black (1998) has been adopted and serves as a fundamental rationalisation of what the JSE’s AltX does. They define a stock exchange as a form of exchange, which provides services for both stockbrokers and traders to trade stocks, bonds, and other securities. All over the world, it is widely accepted that stock exchanges perform multiple roles in the economy. This may include but not limited to the following:

- Raising capital for businesses going public through limited partnerships, venture capital funding, and corporate partnerships/investorship.
- Mobilising savings for investment through an IPO or the issuance of new company shares for listed companies.
- Facilitating company growth – This is because a takeover bid or a merger agreement that is facilitated through the stock market is one of the

simplest and most common ways for a company to grow by acquisition or fusion.

- Profit sharing – When stock price increases it may result in capital gains, dividend pay-out and share accretion, which leads to an upturn in the wealth of profitable businesses.
- Corporate governance – When companies have a wide and varied scope of owners, they generally tend to improve management standards, practices and their level of efficiency, so that they can concurrently satisfy the demands of both shareholders and stakeholders. Also, the imposition of stringent rules on public corporations by both the stock exchange and the government help to properly regulate the operations of listed companies in order to avoid insider abuses.

Haqqi (2020) observes that the JSE Limited (previously the JSE Securities Exchange and the Johannesburg Stock Exchange) is the largest stock exchange in Africa, and among the top 20 bourses in the world. Over the years, the cumulative market capitalisation of the JSE has increased from about 7.8 trillion rand in 2013 to 14.916 trillion rand in 2020 (The ACM-Insight, 2013; Haqqi, 2020). Furthermore, the JSE provides a market where securities can be traded freely under a regulated exchange platform. Besides, as indicated above, the JSE does not only channel funds into the economy, but also provides investors with returns on investments in the form of dividends. More so, it has been observed by Stanlib (2015) that the exchange is successfully fulfilling its main function/core mandate i.e. the raising of primary capital, as well as the rechannelling of cash resources into the productive sector of the economy. Taking together, the lower bourse while fulfilling its duty as a vehicle of wealth formation assists in accelerating the process of job creation and the development of the economy.

According to Cheyne (2016) the AltX is a well-positioned public equity stock exchange that began operations in October 2003 as a division of the JSE Securities Exchange, in order to accommodate good quality, small- and medium-sized high growth companies. Since its inception, more than 120 companies have listed and raised about R48.5bn billion on the lower bourse. The AltX is indeed a catalyst that harbours the necessary preconditions for growth in South Africa. According to the JSE (2019) the AltX appeals to a diverse range of companies in all sectors including but not limited to:

- 1) Young and fast-growing businesses, as well as start-ups;
- 2) Management buy-outs and buy-ins;
- 3) Family-owned businesses;
- 4) Black economic empowerment companies; and
- 5) Junior mining companies.

Apart from the above-mentioned variety of firms that consider listing on the AltX, the JSE (2019) observes that most firms join the AltX in order to issue new shares, raise funds, and widen their investor base, as well as have their shares publicly traded on a formal regulated market. In fact, listing on the bourse gives SMEs a high profile and increases their level of publicity. Moreover, it helps to



improve the performance of firms, and have led to the successful migration of 31 companies to the Main Board, demonstrating significantly that the AltX indeed catalyses the rate of firm growth in South Africa. Contemporary theories of growth suggest that SMEs could become born-global firms within a relatively short period of time if they follow this growth trajectory (Bosma et al. 2020).

According to Mashaba (2014) the AltX replaced the failed venture capital and development capital boards that was established in the 1980s, and basically serves as a nursery for the JSE main board. What's more, its core mandate is to boost the level of entrepreneurship in South Africa across racial lines by providing investment capital to SMEs. EY (2013) studies on this phenomenon suggest that this ensures a firm commitment to furthering the intention and spirit of the BEE legislation by the JSE, which also obviously authenticates their current B-BBEE status. Amongst the numerous advantages that the AltX offers is that: it takes cognisance of B-BBEE partners during corporate mergers and acquisitions; it helps to identify investment opportunities for B-BBEE groups who might want to raise capital; and lastly it assists in the on-going transformation and structuring of companies, in order to help them to meet their current B-BBEE transaction scorecard targets. As earlier stated, this research studies the impact of the JSE's AltX on listed firm's performance and entrepreneurship. Given the fact that the AltX not only channels funds into the economy, but also provides investors with returns on investments in the form of dividend pay-outs, it inherently helps to re-channel cash resources into the productive sectors of the economy. This therefore implies that apart from the lower bourse providing the building blocks of the economy, it concurrently boosts the creation of job opportunities and wealth in South Africa. The AltX consequently provides a pragmatic growth strategy to achieve the country's full economic potential over a medium to long-term period.

Cheyne (2016) asserts that a listing on AltX offers companies numerous benefits, including but not limited to: access to a large pool of investors, the provision and accessibility of greater opportunities for profiling, and enhanced relations with banks, suppliers, distributors and customers. As well as aiding listed firms to retain and attract talent through employee share options schemes. This differentiation strategy sufficiently limits investors' sentiments because apart from raising capital for these businesses and improving their entire processes, listing distinguishes them significantly from their unlisted peers.

Although many literature studies such as those carried out by McLachlan (2011), Pireu (2014), Niekerk (2015) and Brougham-Cook (2016) have rightly posited that the AltX is gaining momentum, however, very few research findings offer a contrary opinion. Hasenfuss (2013) noted that after the period of jittery exuberance just before the 2008 financial meltdown, the collective valuation of suspended firms rose to over R1.6 billion, with outright fizzles such as Country Foods, Alliance Mining and ACTowers taking a toll on the disasters list. But despite this grim reality, Hasenfuss (ibid.) was quick to point out truthfully that the number of casualties is low when compared to the tally after the late-1990 listings boom. Besides, many firms have graduated to the JSE's Main Board

from the AltX. For instance, Pan African Resources, Calgro M3, Curro, Ellies and Litha have been able to achieve this feat easily through their exposure on the lower bourse. This market activism has also led to an upsurge in the collective market cap of the lower bourse. Table 4.1 illustrates that 60 companies are listed on the JSE's AltX with a total market capitalisation of R 32.6 billion (based on the 2016 data). However, it is important to note that 13 firms are not currently trading on the bourse due to suspension.

Likewise, it is worth noting that 13 AltX listed firms have crossed the billion rand mark, however, 47 of these small businesses have not surpassed this confidence boosting market cap. According to ShareData Online (2016) the JSE's AltX has assisted in the development of listed firms, particularly in the financial services sector, retailing and wholesale sector, property development sector, as well as the information, communications and technology (ICT) sector. Also, the junior bourse has aided the development of the alternative energy sector, hotel and tourism sector, media sector, mining sector, and the food and agro-allied sector of the economy. Most studies have attributed this easily accessible funding option as been responsible for the rapid expansion of listed firm's operations within and outside the country. For instance, Tiso Blackstar Group was able to sponsor a buyout of Times Media Group and acquire 22.9 per cent interest in Kagiso Tiso Holdings. Similarly, Sirius Real Estate Limited was able to transform its operation and, in the process, become the largest branded provider of mixed-use flexible workspace in Germany (JSE, 2020). Furthermore, many special purpose acquisition companies (SPAC) and holding companies such as Renergen Limited, M FiTEC International Limited, Sacoven plc, Stratcorp, Universal Partners Limited, NewPark REIT Limited, PSV Holdings Limited, Lodestone Reit Limited and Advanced Health Limited were listed on the lower bourse to facilitate their capital raising ability. This has empowered them to make acquisition of viable assets that provides investors with consistent income, returns and growth over time (ShareData Online, 2016).

Studies carried out by Herrington, Kew and Kew (2014) reveals that most South African firms are either failing or surviving due to their inability to meet up with stringent regulation and competition. However, firms listing on the AltX can surmount these problems given the measures that are available to enhance their performance (Bosma and Kelley, 2019; Bosma et al. 2020). This is because the risk appetite of potential investors as well as the corporate governance requirements of the JSE can help them to rapidly improve their level of efficiency. According to Engelbrecht (2012) by understanding competitors' strengths and weaknesses, as well as, continuously evaluating the evolving needs of customers, and detecting changes in the competitive landscape, listed companies become better positioned to make informed decisions.

**Table 4.1: JSE's AltX Sector listed firms**

S/N	Code	Short Name	Full Name	CEO	Year End	Market Cap
1.0	ACE	ACCENT	Accentuate Ltd.	Fred Platt	June	R 120.64m
2.0	AVL	ADVANCED	Advanced Health Ltd.	Carl Grillenberger	June	R 374.53m
3.0	ADW	AFDAWN	African Dawn Capital Ltd.	WJ Groenewald	February	R 26.31m
4.0	AEA	AFEAGLE	African Eagle Resources plc (s)	Nick Clarke	December	R 43.56m
5.0	AHL	AH-VEST	AH-Vest Ltd.	IE Darsot	June	R 33.65m
6.0	ALH	ALARIS	Alaris Holdings Ltd.	Jürgen Dresel	June	R 369.16m
7.0	AET	ALERT	Alert Steel Holdings Ltd. (s)	Peter Dodson	June	R 38.00m
8.0	ACG	ANCHOR	Anchor Group Ltd.	Peter Armitage	December	R 2.28bn
9.0	ANS	ANSYS	Ansys Ltd.	Teddy Daka	March	R 401.10m
10.0	ARA	ASTORIA	Astoria Investment Ltd.	Darryl Kaplan	December	R 1.44bn
11.0	ALP	ATLEAF	Atlantic Leaf Properties Ltd.	Paul Leaf-Wright	February	R 2.25bn
12.0	BEG	BEIGE	Beige Holdings Ltd.	NMI (Gora) Abdoola	June	R 90.88m
13.0	BFS	BLUE	Blue Financial Services Ltd. (s)	Johan Meiring	February	R 1.07bn
14.0	BIK	BRIKOR	Brikor Ltd. (s)	GvN Parkin	February	R 58.07m
15.0	BSS	BSI STEEL	BSI Steel Ltd.	Craig Parry	March	R 338.33m
16.0	BUC	BUFFALO	Buffalo Coal Corp	Malcolm Campbell	December	R 417.99m
17.0	CRD	CENRAND	Central Rand Gold Ltd.	Lola Trollip	December	R 23.54m
18.0	CSP	CHEMSPEC	Chemical Specialities Ltd. (s)	Baron Schreuder	March	R 107.39m
19.0	CMO	CHROMETCO	Chrometco Ltd.	Petrus Cilliers	February	R 52.24m
20.0	CSG	CSG	CSG Holdings Ltd.	Pieter Dry	March	R 574.44m
21.0	DMC	DIAMONDCP	DiamondCorp plc	PR Loudon	December	R 617.57m
22.0	GIY	GIYANI	Giyani Gold Corporation	Duane Parnham	December	
23.0	GAM	GLOBAL	Global Asset Management Ltd.	Niels Penzhorn	November	R 108.86m
24.0	GDN	GOODERSON	Gooderson Leisure Corporation Ltd.	Gavin Castleman	February	R 76.25m
25.0	GRP	GREENBAY	Greenbay Properties Ltd.	Stephen Delpport	September	R 4.97bn
26.0	ILE	IMBALIE	Imbalie Beauty Ltd.	Esna Colyn	February	R 62.99m
27.0	IHL	INT HOTEL	International Hotel Group Ltd.	Helder Pereira	August	R 1.40bn
28.0	IPS	IPSA	IPSA Group Plc (s)	Phil Metcalf	March	R 50.53m
29.0	ISA	ISA	ISA Holdings Ltd.	Clifford Katz	February	R 162.06m
30.0	JBL	JUBILEE	Jubilee Platinum Plc	Leon Coetzer	June	R 664.03m
31.0	KBO	KIBO	Kibo Mining Plc	Louis Coetsee	December	R 369.09m
32.0	LDO	LODESTONE	Lodestone REIT Ltd.	Jason Cooper	March	R 1.71bn
33.0	MFI	M-FITEC	M FITEC International Ltd.	Charles Rowlinson	March	R 83.80m
34.0	MRI	MINERESI	Mine Restoration Investments Ltd. (s)	Richard Tait	February	R 25.89m
35.0	MNY	MONEYWB	MoneyWeb Holdings Ltd.	Marc Ashton	June	R 26.94m
36.0	NFP	FRONTIER	New Frontier Properties Ltd.	Mike Riley	August	R 3.36bn
37.0	NRL	NEWPARK	Newpark REIT Ltd.	Simon Fifield	February	R 625.00m
38.0	NUT	NUTRITION	Nutritional Holdings Ltd.	Thabo Mokgattha	February	R 34.97m
39.0	NVE	NVEST	NVest Financial Holdings Ltd.	Anthony Godwin	February	R 908.23m
40.0	OAS	OASIS	Oasis Crescent Property Fund	Mahomed Ebrahim	March	R 1.05bn
41.0	PSV	PSV	PSV Holdings Ltd.	Abilio da Silva	February	R 101.03m
42.0	QPG	QPG	Quantum Property Group Ltd. (s)	Gary Shaff	August	R 29.07m
43.0	RAR	RARE	Rare Holdings Ltd.	Themba Siyolo	June	R 63.04m
44.0	RBA	RBA	RBA Holdings Ltd.	AJ Rothman	December	R 111.35m
45.0	REN	RENERGEN	Reveren Ltd.	Stefano Marani	February	R 1.08bn
46.0	SCV	SACOVEN	Sacoven Plc	Mark Daniell	March	
47.0	SVF	SVF	Southern View Finance Ltd. (r)	Hendrik Scholtz		
48.0	SVB	SILVERB	SilverBridge Holdings Ltd.	Jaco Swanepoel	June	R 92.17m
49.0	SRE	SIRIUS	Sirius Real Estate Ltd.	Andrew Coombs	March	R 6.89bn
50.0	STA	STRATCORP	StratCorp Ltd.	Anniruth Kissoonduth	February	R 6.15m
51.0	TLM	TELEMASTR	TeleMasters Holdings Ltd.	Mano Pretorius	June	R 29.40m
52.0	TBG	BLACKSTAR	Tiso Blackstar Group SE	David Adomakoh	June	R 2.08bn
53.0	TCS	TCS	Total Client Services Ltd. (s)	Lindikhaya Sipoyo	February	R 4.90m
54.0	UPL	UPARTNERS	Universal Partners Ltd.	Pierre Joubert	June	R 1.12bn
55.0	VIN	VESTIN	VestIN Holdings Ltd. (s)	Daniel Romburgh	June	
56.0	VIS	VISUAL	Visual International Holdings Ltd. (s)	Charles Robertson	February	R 33.45m
57.0	VUN	VUNANI	Vunani Ltd.	EG Dube	February	R 196.76m
58.0	WEA	WEARNE	WG Wearne Ltd.	John Wearne	February	R 22.11m
59.0	WTL	WILLTELL	William Tell Holdings Ltd. (s)	Johan Diederiks	June	R 11.25m
60.0	WKF	WORKFORCE	Workforce Holdings Ltd.	Ronny Katz	December	R 438.72m
<b>TOTAL MARKET CAPITALISATION</b>						<b>R32.6bn</b>

0

**Source: JSE, 2019**

In addition, share funding proceeds could be used to expand the level of investments in R&D, and also applied in the re-branding process of SMEs, as well as to market/distribute goods and services that have been produced (JSE, 2019). Furthermore, listing improves firm decision-making and resource allocation, reduce costs, and assist to identify new opportunities and inefficient

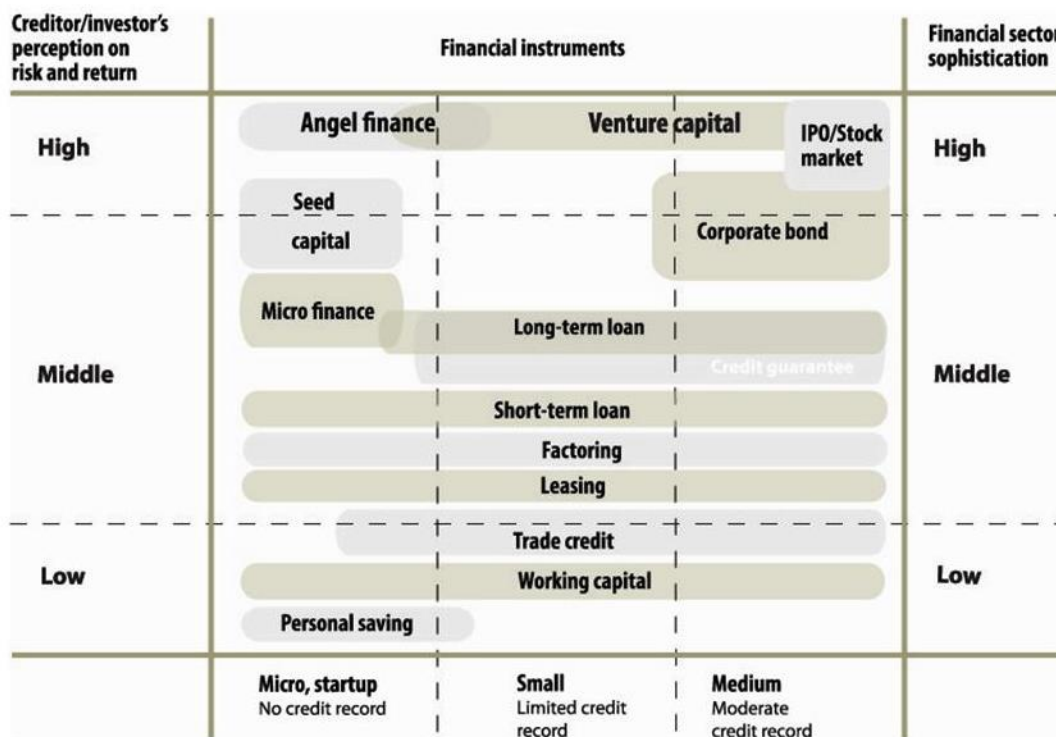
business processes that are ripe for re-engineering (CIO, 2013). This therefore helps firms to optimally target their business resources and marketing towards very lucrative areas, which reinforces the findings of earlier studies (Dana et al. 2018; Siwela, 2020). According to Tilman (2012) such powerful adaptive advantage that has become a key determinant of survival, success, and relevance is required by South African SMEs. More so, the pressures of a low growth and low return environment, higher costs of doing business, higher capital requirements, stiffer compliance standards, and on-going deleveraging and demutualisation – continues to put business models to the test (International Trade Centre, 2020; The Heritage Foundation, 2020). One of the top global advisory firms EY (2013) have precisely indicated that South Africa's SMEs' ability to thrive in this kind of environment depends on how they continually adapt and redefine their core value propositions over time. Listing will definitely help struggling South African companies to quickly move up the business competitive sustainability spectrum *ceteris paribus*. By timeously exploiting investors funding, small businesses worldwide prevent early-stage business failure, in favour of high growth/prosperity.

#### **4.3 THEORETICAL EVIDENCE SUPPORTING CAPITAL MARKET LISTING**

All over the world, inadequate SME financing is considered as a significant constraint to the rate of business birth rate, and also leads to business discontinuation (Dana et al. 2018; Bosma et al. 2020). According to Stein, Goland and Schiff (2010) the unmet need for SME credit stands at about \$2.5 trillion in emerging markets, while in high-income economies the estimated financing gap is about \$3.8 trillion. Disparately important is the fact that Sub-Saharan Africa has the largest financing gap in relative term globally. Hence this trend is thus encouraging studies that focus on theoretical development in this field, particularly in the area, which deals with the impact that an improved financial and capital market infrastructure has on small enterprise growth. Furthermore, empirical data uncovers that historically disadvantaged communities find it difficult to obtain financial mediation that supports their business (Deakins and Freel, 2012). Consequently, many SMEs are unwittingly excluded from the mainstream mesocredit sector. New research reveals that this anomaly can be linked with the challenges of adverse selection and moral hazard, which is known to occur when genuine and profitable SME propositions are ignored due to information ambiguity, while SMEs that eventually fail are favoured. The World Economic Forum (2016) contend that this interplay of factors is now triggering (more than ever before) the growth of alternative investments, as an attractive capital financing option for SMEs.

Borrowing from corporate finance literature, the financial growth cycle model for SMEs advances the underlying theory which influences small firm financing.

From Figure 4.2 we can deduce that SME perception of risk and return determines the financial instrument that firms use to fund their operation. Abe (2015) notes that creditor and investor’s perception on risk and return range from high, middle, and low. Micro and start-up firms without credit record normally use their personal savings for business, and if lucky, could gain access to micro finance loans, seed capital, as well as other angel finance. However, small firms with limited credit record could seek trade credit to boost their working capital. Most of these firms also use overdrafts, short-term and long-term loans, including leases, trade financing/factoring and venture capital/mezzanine funds to finance their operations (Casser and Holmes, 2003; Matemilola and Bany-Arifin, 2011; Adair and Adaskou, 2015). Similarly, medium firms with fairly detailed credit record would definitely prefer corporate bonds, private equity and stock market IPOs due to their low cost (Gregory, Rutherford, Oswald and Gardiner, 2005).



**Figure 4.2: Forms of Finance for SMEs (Source: Abe, 2015)**

According to Gregory et al (2005) it has been observed that as firms grow older, larger and employ more staff they tend to comply with complex financial reporting/governance standards. This ultimately ensures that they meet the documentation requirements for various financing options – a sine qua non (i.e. necessary condition) to obtain funding for expansion. Similarly, López-Gracia and Sogorb-Mira (2008) posits that SMEs financial policy and capital structure are influenced by both the pecking order model and trade-off model. It has been empirically proven in entrepreneurship and SME literature that most businesses

start-up capital comes from the personal savings of individuals, family and friends. Later on, as these SMEs grow, they begin to use the retained profits of the firm, venture capital funding and bank loans to finance their operation (Bosma et al. 2020). However, with greater exposure, experience and age, these firms have to patronise the stock market for strategic reasons via IPOs, corporate bonds, and equity sales, so that their long-term sustainability can be guaranteed.

Furthermore, according to the trade-off theory (TOT) and pecking order theory (POT) firms leverage on their corporate financial portfolio using a critical path that yields optimum profit from short to a long-term period (Bukalska, 2019; Agyei, Sun and Abrokwah, 2020). Modigliani and Miller (1958: 1963) posit that firms are motivated to use debt rather than equity instruments because debt payments are tax deductible and less risky in the short run. However, in the long run it becomes more expensive thereby necessitating a mixture of both instruments, based on the weighted average cost of capital – WACC (Tarver, 2015). This informs the argument that the static TOT is not practicable (Casser and Holmes, 2003), although, the dynamic TOT has generalist applicability – no matter the size of a firm (Adair and Adaskou, 2015).

Like most phenomena, scholars have differing opinion about SME finance growth theory. Myers and Majluf (1984) thus developed the POT in order to cater for the information asymmetry that existed between a firm's ownership/management and other stakeholders. They argued that most firms use internal financing to fund their operation, but as time goes by and their resources are depleted, then debt financing becomes the main source of financing (Bukalska, 2019; Agyei, Sun and Abrokwah, 2020). However, as more debt is piled on existing loans the firm approaches bankruptcy, hence, equity issuance becomes sacrosanct (López-Gracia and Sogorb-Mira, 2008). At this point investors seek part ownership and control of these firms in exchange for funding. This is assumed to be overvalued, therefore causes constant re-adjustment of the company's share price (towards the equilibrium level) in the stock market.

Additionally, the finding of a study carried out by Stein, Goland and Schiff (2010) concludes that as firms grow larger in size, older, and transparent, they become more profitable, and their financing options become more attractive. Nonetheless, despite finding clear evidence that SMEs follow a funding source hierarchy (i.e. POT), new studies point towards the TOT since firms can reach target or optimum leverage within a relatively short period of time (Matemilola and Bany-Ariffin, 2011). Recent literature studies reveal that it is uneconomical for SMEs to issue company shares on the JSE because of the exchange's huge commission costs and its flat fee rating structure. Listing on the AltX is therefore

an attractive growth opportunity for SMEs (JSE, 2019). Available empirical data indicates that many SMEs enter forced receiverships due to illiquidity, the JSE's AltX thus offers an avenue to mitigate such risks via a combination of asset structures, and also offers tremendous growth opportunities for these (i.e. listed) companies (World Economic Forum, 2016).

#### 4.4 THE NATURE OF THE JSE'S ALT X

A large body of knowledge has been developed in order to help researchers improve their understanding of the nature and characteristics of stock exchanges worldwide, specifically research in this area will assist researchers in evaluating the impact of investor's decision on aggregate firm-level activities (Wuyts, 2007; Yartey and Adjasi, 2007; Akinlo and Akinlo, 2009; Cetorelli and Peristiani, 2010; Nazir, Nawaz and Gilani, 2010; Seetanah, Subadar, Sannasee, Lamport and Ajageer, 2012; Fernandes and Giannetti, 2013; Kim, and Heshmati, 2014; Haqqi, 2020; International Trade Centre, 2020). However, much less research has explored the nature of alternative exchanges. This therefore prompts a brief discussion on the nature of the junior bourse.

Borrowing from available historical literature, the JSE's AltX is modelled after the London Stock Exchange's (LSE) Alternative Investment Market<sup>8</sup> (AIM), which is the most prominent international market for smaller growing companies (London Stock Exchange, 2015). Thus, the AltX was established with the sole aim of providing SMEs with access to capital and also to provide investors with exposure to fast-growing smaller companies in a regulated environment (JSE, 2019). However, unlike AIM, which is the most successful growth market in the world (TD Direct Investing, 2015), the AltX is the JSE's board for good quality, small and medium-sized high-growth companies (i.e. mostly made of small and local indigenous companies).

Espenlaub, Khurshed, and Mohamed (2008) examined the reasons why the AIM captured the largest share of this market, and discovered that the major success factor was the Nomad<sup>9</sup>, and (minimum) requirements on firm age, size, and public float. Hence, the AIM provided a clear path and an eye-opener for similar market places like the upper-tier of the US over-the-counter market (OTCQX), Italy's AIM Italia, Japan's Tokyo AIM, TSX-V in Canada and of course the JSE's AltX. Their study's conclusion was that the AIM's rise could be linked with the aftermath of the dot com burst. This necessitated the US Securities and Exchange Commission (SEC) to enforce stringent market regulation as stipulated in the burdensome Sarbanes Oxley Act of 2002 reforms (Prawitt, Sharp, and Wood, 2012), meanwhile, during this period the AIM introduced lax listing regulation in the United Kingdom (UK) that became attractive to many SMEs. The resultant effect was the counterbalancing impact of low listing in the US and an influx of new listing in the UK, consequently reflecting the tremendous influence of globalisation on market listing worldwide.

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<sup>8</sup> The Alternative Investment Market (AIM) was established in 1995 by the LSE.

<sup>9</sup> A designated adviser or sponsor.

Similarly, this trend has been experienced on the AltX with many foreign firms opting to list on the junior bourse instead of their own country of origin because of the compliance implication of stringent regulation.

The Monevator (2009) posits that a wide range of businesses including early stage, venture capital backed as well as more established companies join the alternative exchange seeking access to growth capital, while simultaneously enjoying the benefits of this flexible market's simpler admission process. According to Killick (2008) the main advantage of listing on the alternative exchange is because mergers and acquisitions become easier to pay for. Also, improved opportunities for raising finance due to less regulation, greater marketability, better valuation, enhanced corporate image and increased employee participation via share schemes, are significant factors that attract SMEs to the lower bourse. However, new studies reveal that the major demerit of the alternative exchange is that fledgling SMEs may lose control, and management time due to the time-consuming listing requirements. Furthermore, listing may create a lack of privacy due to reporting requirements. Likewise, listing might increase initial and on-going costs amidst high shareholders' expectations and restrictions quotas on selling existing shares.

According to the JSE (2019) in order to be qualified for listing, a company must appoint and retain the services of a registered designated adviser<sup>10</sup> (DA). An assessment of the AltX reveals that DAs helped to prepare SMEs for flotation (The Startups Team, 2015) and also, decide whether or not a company is suitable for listing as an investment proposition (i.e. in terms of the quality and integrity of its management). DAs are also obliged to comply with quality controls, such as director education (JSE, 2019). According to the Institute of Directors in Southern Africa – IoDSA (2017) the agreement between the 'professional body' and the 'regulator' i.e. JSE entails that the training of AltX directors would enhance the ability of the managerial boards of listed SMEs. Hence, improved knowledgebase would definitely translate to enhanced discharge of their of duties, because, better directors results in better boards and businesses. Furthermore, the AltX Director Induction Programme (DIP) must be undertaken by all non-executive and executive directors in order to address the emerging needs of the board, and also reinforce their competence in fundamental knowledge areas. For example, the DIP focuses on corporate governance issues, listing requirements, as well as the role directors' play in risk management and assurance, integrated reporting and their compliance with the trading rules. Thus, while the DIP prevents market abuse and insider trading, it also, encourages business sustainability and value creation.

Additionally, the AltX corporate governance provisions requires that listed firms should employ the services of a company secretary, banker, auditor, attorney, transfer secretary, and an investor relations consultant (JSE, 2019). Besides,

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<sup>10</sup> In terms of job specification, a DA plays a similar role to a JSE sponsor (and an AIM nominated adviser-Nomad or OTCQX designated advisor for disclosure-DAD) but has different responsibilities. A DA must support, sponsor and motivate an application before any firm can be listed on the AltX.



listed companies are required to make public disclosure of all company information on the Stock Exchange News Service (SENS), so that investors, shareholders and stakeholders such as banks, suppliers, distributors and the tax authorities can use it in their decision-making process. Consequently, this implies that all necessary information, which can either distort and/or cause price movement in the market are disclosed timeously. Similarly, end of the day data, live data, and delayed data are required to be disseminated via the SENS real-time and online throughout the year. Furthermore, news information relating to corporate actions, mergers, take-overs, rights offer, capital issues, cautionaries and company reports must be furnished on the SENS for all stakeholders to access without obstruction.

According to Heerden (2015) for the fact that the AltX listing requirements does not rely on a proven track record (but instead on forecasting) attracts numerous SMEs to the lower bourse. And also bring a great deal of uncertainty to investors who definitely prefer verified audited financial statements of listed firms to keep track of the records of companies of interest. Many analysts believe that high liquidity implies lesser risk exposures, therefore investing on a less liquid exchange like the AltX could lead to huge exposures (which can also result to a positive abnormal return). Despite this drawback in the requirements for listing on the AltX, both the JSE and AltX require that firms willing to list on the bourse must utilise one of the following different approaches. Firstly, the JSE (2020) reveals that companies who do not need to raise capital but have a sufficiently wide public spread of shareholding can use an introduction to list. Thus, this method provides several buoyant companies with a fast and cheap means of listing on the lower bourse.

Secondly, firms can use private placements during the listing process, so that shares can be offered to prospective shareholders by mutual private negotiations. However, in contrast, firms using an offer for subscription may issue a public offer to members of the public. Fourthly, a SPAC listing might be used by SMEs to facilitate a capital raising process, in which experts would be able to acquire firm assets and construct a viable listed company thereafter. Lastly, a fast-track listing process is available and can be used by established international companies that are already listed on major stock exchanges for at least a period of 18 months (JSE, 2019). Consequently, many foreign listed companies have been able to secure a secondary listing on the AltX due to their listing status on bourses such as the Australian Stock Exchange, LSE, the Stock Exchange of Mauritius (SEM), New York Stock Exchange (NYSE), NYSE Euronext, as well as the Toronto Stock Exchange venture exchange (TSXV).

#### **4.5 JSE MAIN BOARD VS. ALT X LISTING REQUIREMENTS**

Information furnished by the JSE (2020) clearly stipulates the guidelines for listing on the JSE Main Board and the AltX, taking cognisance of all the primary markets listing fees. According to Mashaba (2014) the AltX was established exclusively to cater for the needs of small and medium sized firms, so that they can access the equities market, and benefit from less stringent listing

requirements. This statement reinforces the findings of previous studies. In a similar vein, after reviewing the two exchanges (i.e. the JSE and the AltX) listing requirements Heerden (2015: 24) posited that “the JSE did indeed create a catalyst for small and medium sized companies to attract capital that they wouldn’t have otherwise had access to,” which is good.

**Table 4.2: JSE and AltX listing requirements**

LISTING REQUIREMENTS	MAIN BOARD	ALT X
Share Capital	R50 million	R2 million
Minimum Number of Shares	25 000 000	2 000 000
Profit History	3 Years Audited	Not Required But must provide profit forecast for the remainder of the financial year & yearly thereafter
Pre-tax Profit	R15 million (in current year)	Not Applicable
Public Shareholder Spread	20%	10%
Directors Training	Not Required	AltX Induction Program
Number of Shareholders	300	100
Broker-Dealer	Sponsor	Designated Adviser
Financial Forecast	Not Required	Minimum 2 Years
Publication in The Press	Compulsory	Voluntary
Number of Transaction Categories	2 (threshold 25%)	2 (threshold 50%)
Special Requirements	Not Applicable	Appoint Financial Directors
Annual Listing Fee	0.04% of average market capitalisation with a minimum of R42,050 and a maximum of R370,000 (including VAT)	R32,077.93 (including VAT)
Education Requirements	Not Applicable	All Directors must attend Director’s Induction Programme
Non-Executive Directors	King Code	Minimum 25%
Governance	King Code & JSE	JSE, King Code & Audit Committee
Related Party Transactions	Any Size Announce	Any Size Announce
Relevant Company Information	Public/SENS	Public/SENS
Transaction Announcement	-	-
Category 1	25% or more	50% or more
Category 2	5% or more and less than 25%	5% or more and less than 50%

**Source: JSE, 2019**

Table 4.2 reveals the differences between the two bourses. The minimum share capital for the JSE Main Board is pegged at R50 million, in contrast to a meagre R2 million that is required for companies that want to register on the AltX. This translates to 1/25 of the total number of shares that is required to list on the Main Board. Likewise, the minimum number of shares to be issued on the JSE is pegged at 25 million, compared to 2 million shares on the AltX. Thus, this implies that JSE listed companies inherently enjoys more liquidity than AltX companies, since they have 12.5 times more shares to be issued to the public as a minimum than the AltX.

Furthermore, the JSE’s listing requirement entails that companies should submit an audited financial statement indicating a profit history for the preceding three financial years, of at least R15 million before taxation. While,

20 per cent of each class of equity securities shall be held by the public to ensure reasonable liquidity. However, the AltX obliges that firms that want to list on the bourse must submit a profit forecast for the remainder of the financial year during which it intends to list and one full financial year thereafter. Also, the AltX requires that all firms that intend to list on the bourse should appoint an executive financial director. Nevertheless, the public must hold a minimum of 10 per cent of each class of equity securities in order to safeguard reasonable liquidity on the AltX. More so, all AltX directors must complete a DIP (JSE, 2020). It therefore implies that listing on the AltX can be realised at a significantly lower cost due to fewer unambiguous procedural requirements, unlike what is obtainable on the Main Board (Mashaba, 2014).

Although the JSE Main Board require an annual listing fee of at least R42,050 or a maximum of R370,000, while the AltX requires a paltry R32,077.93 flat listing fee, more companies are listed on the JSE. As earlier stated in the previous section, increased transparency and fair reporting have boosted investor confidence on the JSE. However, this trend is about to change due to the very difficult macroeconomic environment that is recovering from the 2008 financial meltdown and the Covid-19 pandemic (International Trade Centre, 2020). According to Heerden (2015) at least 7 companies have moved from the Main Board to the AltX. Hence, this emphasises the fact that an AltX listing will definitely ensure that small firms rapidly gain traction in the corporate market at the least possible cost, in a scalable and sustainable manner.

The JSE (2020) declared that technology company EOH grew from employing 50 people to employing nearly 10,000 persons after listing on the JSE. Nonetheless, the most inspiring news has been that the Delta Property Fund raised nearly R3.5 billion in its first two years of listing on the AltX. This recent development now serves as a motivation for other non-listed small businesses to list on the lower bourse, as well tap from the vault of resources on the premier African Exchange. Certainly, the AltX is the gateway to new opportunities on the continent. Although, more than R250 billion has been recently raised on the Main Board, and an extra R1 trillion investments in listed bonds, the JSE market capitalisation of about R11.7 trillion can be improved upon. This trend indicates that there exist gales of opportunities on the bourse especially with the recently established AltX helping to raise about R48.9 billion. Furthermore, recent upgrades from the AltX to the JSE (Heerden, 2015) are a reassuring indicator of the merits of listing on the lower bourse. Besides, such evidence demonstrates the commitment of the JSE's AltX support for SMEs.

#### **4.6 THE JSE'S ALT X AND ENTREPRENEURSHIP**

Contemporary literature studies have contended that the level of entrepreneurship differs significantly across various regions and countries (Herrington, Kew and Kew, 2014; Bosma and Kelley, 2019). In some localities clusters of dynamic firms gain from marketplace information spill over (Bosma et al. 2020), while in other places intangible factors may be can be linked with the success of firms. However, in some communities and municipalities due to a poorly developed banking and capital system infrastructure, citizenship over-

dependence on social assistance from government, and a devastating lack of innovatory skill sets these regions lag behind. The findings of Lucky and Olusegun (2012) studies reveal that entrepreneurship leads to the creation of SMEs and large high growth firms. The establishment of the AltX is expected to precipitate spill overs from this sector to the broader economy.

Despite the pernicious effect of a turbulent macroeconomic environment in South Africa, the lower bourse has continued to play a strategic role in the development of several entrepreneurial ventures. Literature studies carried out by Theunissen (2012), Mashaba (2014), and Heerden (2015) suggest that firm listing on the AltX strengthens the financial position of SMEs. This argument is fortified by the immense importance of company share offerings, which aids the reinforcement of numerous SMEs dynamic capabilities, consequently, resulting in their rapid growth and profitability. Since most SMEs in South Africa are cash strapped and rely on costly loans to survive, it is absolutely imprudent/preposterous to use expensive sources of financing when the AltX offers cheaper funding. Moneyweb (2015) is of the view that the AltX has proven to be an effective incubator, because it allows SMEs to gain the vital publicity of listing on an open market, and simultaneously assist to train the directors of these young firms. Rigorous analysis of the impact of the JSE's AltX on listed firm's performance, have shown that listing have aided the growth and expansion of many companies (JSE, 2020).

Egwuatu (2010) finds that entrepreneurial firms need financing in order to operate, restructure, recover and keep businesses afloat. The listing of SMEs on the AltX will definitely enable these small businesses to source capital that can be used to set up and expand operations, develop new products and invest in new staff and production facilities. Furthermore, unlike large businesses that have access to funding from banks, capital markets, as well as other suppliers of credit, many small businesses are caught in the missing middle of the financing gap, as identified by Myers and Majluf (1984). The JSE's AltX is therefore impulsively filling this critical gap. Endeavor (2010) observes that there is a general perception and misconception amongst entrepreneurs in South Africa about the lack of availability of funds to support small businesses, which is indeed fallacious. As a consequence, this puts AltX listed firms at an advantage over other SMEs in the country, since they can easily obtain interest free funding in the capital market. Thus, helping to reduce the failure rate of small businesses in South Africa.

Likewise, recent studies suggest that the AltX through its corporate governance compliance requirements ensures that information symmetry is accessible to potential investors due to proper disclosures. Hence, enabling them to make informed investment decisions that make the entrepreneurial process to be productive. Also, it is important to note that firms that are registered on the lower bourse can easily access bank loans and credit facilities from suppliers (Egwuatu, 2010; Heerden, 2015; Cheyne, 2016). According to Endeavor (2010: 2) entrepreneurship offers a fundamentally significant path to the economic advancement and social development of South Africa. However, without mincing words the AltX is the vehicle, which ensures that SMEs provide the

necessary conditions for such industrial take-off. Through constant innovation, entrepreneurs create new/competitive markets and businesses that lead to job creation and have a multiplying effect on the economy (Bosma and Kelley, 2019; Bosma et al. 2020). Interestingly, the AltX is therefore using entrepreneurship to empower citizens and also provide equal opportunities to erstwhile disadvantaged communities, thereby aiding and successfully integrating them into the mainstream economy (Dana et al., 2018).

#### **4.6.1 THE ADVANTAGES OF LISTING ON THE JSE'S ALT X**

Extracts from the annual financial statement of listed firms accessed from ShareData Online (2016), IRESS (2020) and the JSE (2020) uncover the following benefits of registering on the lower bourse:

- 1) The AltX offers a 24 hours, 5 days a week state of the art online trading platform and market that is accessible from anywhere in the world.
- 2) The lower bourse has high liquidity that massively uplifts the marketplace due to elevated daily traded volumes across the market that is immune to manipulation by either individuals or the government.
- 3) Many firms register on the junior bourse in order to gain access to capital and increase the profile of the company via general public awareness of what the firm does. SMEs leverage on borrowed capital and benefit from the pooling of investors fund, since company shares are purchased and dividends are paid to shareholders at a fractional cost that is less than firm profits.
- 4) The spread in share price co-movements allows for greater yield per share and high-level probability of profiting in the market. Furthermore, this enhanced predictability gives room for profiteering in both rising and falling market levels.
- 5) In addition, the AltX offers training services for listed company directors and officials, which exposes management to good investment practices that leads to improved efficiency and effectiveness.
- 6) Listing on the AltX enhances firm transparency and probity. This is because listed companies publish audited annual statements that enable traders to make informed 'buy and sell' decisions that reduce their portfolio risks and increases returns.
- 7) Registering on the lower bourse enables SMEs to appropriately position themselves strategically in line with their short, medium and long-term growth objectives. Capital sourced from the AltX could be used to attain short-term goals such as product and market expansion through partnership agreements with other firms. More so, listing funds could be used to diversify SME market segments, across both public and private niches, thereby increasing manufacturing volume both locally and internationally. Likewise, these firms could use capital raised on the exchange to develop long-term strategic positioning via acquisitions, joint ventures, and global partner of choice selection.
- 8) The implementation of good governance systems in listed firms makes them attractive to the entire business ecosystem (i.e. investors and shareholders, clients, partners, suppliers, lenders, industry players,

- employees, the government and regulators, as well as the host community).
- 9) Furthermore, increased incentives and remuneration that are paid by listed firms motivates talented personnel to work for and be attracted to these companies, thereby increasing their productivity levels. Besides, low staffs churn rate assists in the retention of quality human capital, which is the key to the future sustainability of these firms.
  - 10) Also, listed firms can effectively and efficiently manage risk through the implementation of diversification strategies, divestment and acquisitions.
  - 11) Additionally, companies that are registered on the lower bourse can copiously deliver an effective social community development engagement programme that is environmentally sustainable.
  - 12) Listings afford employees, business associates and institutional investors the opportunity to participate directly in the equity and future growth of a company.
  - 13) Similarly, listing offers companies an access to capital, which is used to facilitate and accommodate future growth for the firm. It therefore enables firms to consolidate their position in their industry through the acquisition of assets or companies holding these assets.
  - 14) Relatedly, listing enables small businesses to gain international exposure, because of the participation of foreign individuals, retail and institutional investors in the sale and purchase of shares.
  - 15) Finally, as earlier discussed in the previous section (in agreement with the notion that is propounded in the POT), firms might list on the AltX to reduce debt and boost company liquidity levels. Notwithstanding the loss of shareholding – in so far that there is a potential tax benefit accruing to them.

Available evidence from the annual report of TeleMasters (2016; 2019) state that the company's listing on the JSE's AltX enabled the firm to provide a BEE 'enabler' for the group, and added substantial value to the company's proposition to clients, prospective partners and staff. Their affirmative action reinforced the focal significance of small businesses' desire to join the lower bourse. Unsurprisingly, African Dawn Capital Limited was able to grow and transform its micro and structured property finance business into a venture capital vehicle following its listing on the AltX (African Dawn, 2019). Equally important, is the fact that registering on the exchange assisted the company to consolidate and improve the managing and reporting structures in place, as well as help to strengthen the company's core activities and capabilities. In the case of Giyani Gold (2016), listing provided the company with an additional source of financing, from which long-term capital was obtained. Furthermore, the company's cash reserve was used to fund the group's exploration project (KiboMining, 2016; 2018), value chain, as well as shore up the working capital requirements that would facilitate the future growth of the company.

#### **4.6.2 THE DISADVANTAGES OF LISTING ON THE JSE'S ALT X**

Despite the numerous advantages of listing on the JSE's AltX, some researchers have criticised the ability of the lower bourse to positively impact

on SMEs. Matter-of-factly, many registered firms have pointed out that the major problem of listing is the high fixed cost base relating to listing and compliance matters, which make inefficient companies not to be able to reduce or even contain costs. Hence this ultimately leads to their insolvency/liquidation. According to Giyani Gold (2016) listing expense can include one of or all of the following cost centres; corporate adviser and sponsor service fee, attorneys fee, printing, publication and marketing costs, JSE listing fee, JSE documentation fee, and more tax obligation.

Furthermore, some listed firms have complained about the time-consuming demand of complying with the JSE's regulation, leaving few man-hours to the company to concentrate on their core activities. Also, due to the impact of the B-BBEE enforcement standard on most company's operation, some of them would rather have primary listing on friendly exchanges like the SEM, and then deliberately implement a secondary listing on the AltX (Central Rand Gold, 2016). Similarly, B-BBEE interpretation could cause a partial dilution of company shareholding and ownership status, which might not augur well for their business proposition to other stakeholders. Consequently, listing can be unfavourable to certain businesses (Alert Steel, 2013).

#### **4.6.3 CORPORATE GOVERNANCE ON THE JSE'S ALTX**

The instability, lack of trust and scandals caused by the global market crash of 1997/2008 has led to the promulgation of stringent corporate governance and prudential regulation across the world. Numerous literature studies on start-up financing support the notion that good corporate governance is the secret ingredient that is required by SMEs to achieve business success and sustainability. The passage of the Companies Act 71 2008 in South Africa, and the implementation of the King Code of Governance Principles, as well as the King Report on Governance (i.e. King III/King IV Report) have put the country on the world map of business regulation. According to Miller and Kim (2017) South Africa is ranked number 81 in the world with a regional rank of number 6 indicating that the country is a moderately free economy. Research studies have pointed out that due to the high correlation between open markets and regulatory efficiency, there exist a great potential and outlook for the country (The Heritage Foundation, 2020). More so, the JSE is one of the best-regulated stock markets in the world (World Economic Forum, 2017). Obviously, its listings requirements have been calibrated to avoid pitfalls that could damage investors' confidence. This is because of the plausible negative impact of fiscal irresponsibility on both the lower bourse and the nation's economy.

Naidoo (2009) is of the view that corporate governance assists the board and executive management of listed companies to adhere to best practices in the rules and processes by which successful businesses are operated. This promotes fairness, transparency, accountability and integrity in firm relationship

with all stakeholders with a view to increasing shareholder value. However, these new standards have expanded both the external and internal stakeholders, and the reporting requirement of SMEs. Furthermore, internal stakeholders are enlightened on the need to make their companies good corporate citizens, especially in their dealings with the main external stakeholders like shareholders, debt holders, trade creditors, suppliers, customers, trade unions, civil society groups and communities affected by the corporation's activities (JSE, 2020). So, apart from submitting an audited annual financial statement, this new requirement necessitates that companies must comply with disclosure standards and monitoring compliance. More so, companies are thus encouraged to implement socially responsible programmes that have social, safety, health and environmental inclination. Hence all firm activities must be reported in the integrated sustainability section of the annual statements of listed companies – in compliance to the new regulatory standards (Naidoo, 2009).

Also, as a control measure, the JSE's AltX advice that non-executive and executive directors of listed companies should be individuals of incredible skill, high calibre, experience and credibility. In addition, they must meet quarterly or whenever necessary to formulate firm strategy, as well as deliberate on the issues that confront them (ShareData Online, 2016). Likewise, as board members of quoted firms, non-executive and executive directors are authorised to approve or disapprove all acquisitions and disposals. More so, the AltX requires that directors should endorse all major capital expenditure, and have oversight responsibilities on all financial and administrative activities, as well as other matters that may materially impact on the entire value chain of the business. Similarly, the JSE mandates that all conflicts of interest must be stated via full disclosures.

Finally, the corporate governance requirements of the JSE's AltX requires that listed companies must update their websites regularly, so that stakeholders can be constantly informed of their activities (JSE, 2020). Also, as a top priority, all listed company's website must ensure that they provide the latest and historical financial information, including company management profiles. This must be undertaken, side-by-side with the SENS shareholder communication. Besides, the board secretary is mandated to write the minutes of all board meetings, and regularly update the board about any regulatory change. More so, the board is mandated to ensure that the company's account comply with relevant legislation and standard, which implies that their accounts must be audited by an independent professional entity (IoDSA, 2017). Given the current regulatory requirements, all quoted companies are now obliged to comply with the B-BBEE legislation whose clear mandate is to redress the inequalities of the past. Consequently, this new Act ensures that listed SMEs train and patronise



individuals and younger firms from erstwhile disadvantaged communities who lack the wherewithal to succeed without assistance (Siwela, 2020).

#### **4.6.4 RISKS CONFRONTING THE JSE'S ALTX LISTED COMPANIES**

Despite the existence of numerous controls that are being implemented by AltX quoted companies, these firms are still exposed to exogenous risks – which are outside the jurisdiction of both firms and their regulators. The following risks have been observed to be noteworthy;

- I. Financial and business risks: This refers to the risk that occurs when a listed firm's cash flow is insufficient to pay creditors and fulfil other financial responsibilities (Guzman, 2018). Going forward, it therefore means that increasing business debts leads to illiquidity, and this necessitates the classification of this risk as a financial risk. Relatedly, business risks occur when a company's cash flow cannot cover the operating expense of a firm. Apart from the aforementioned details, financial risks can also be caused by compliance to regulations, reporting structures, accounting standards, taxation, foreign currency exposure, interest rate risk and loan covenants. Similarly, systemic risks like war, natural disasters, pandemics and business cycles could lead to economic crashes and recession, while unsystematic risks could affect companies that specialise in niche areas during market downturns.
- II. Operational risk: It has been observed that this risk is associated with the asymmetry between actual and predicted losses which occurs when people and systems cause an internal process failure, or due to external factors such as legal risk, fraud, security breach, privacy protection, as well as physical or environmental risks. Besides, safety, cost of energy, input costs valuation, information technology risks and the trading environment are typical examples of operational risk (Giyani Gold, 2016). In South Africa, load shedding, which is an operational risk leads to higher cost of electricity and water, and also causes either sub-optimal production levels or the partial shutdown of industrial facilities.
- III. Strategic risk: Many AltX listed companies suffer from risks that are strategic in nature. This occurs when firms use unsuccessful business plans that are defective and misleading in terms of their capabilities and revenue potentials (Alert Steel, 2013; African Dawn, 2019). For instance, inadequate resource allocation, failure to respond well to changes in the competitive business environment (due to the impact of creative destruction and the Corona virus pandemic), defective business models, brands, reputation and regulation can cause firms to be exposed to strategic risks (Chrometco, 2016; TeleMasters, 2019;

International Trade Centre, 2020). Additionally, the B-BBEE regulation is making firms to consider the lower bourse as a secondary listing, due to the huge demands for compliance (DiamondCorp, 2016). This consequently triggers some kind of procedural strategic risks on the exchange for listed SMEs.

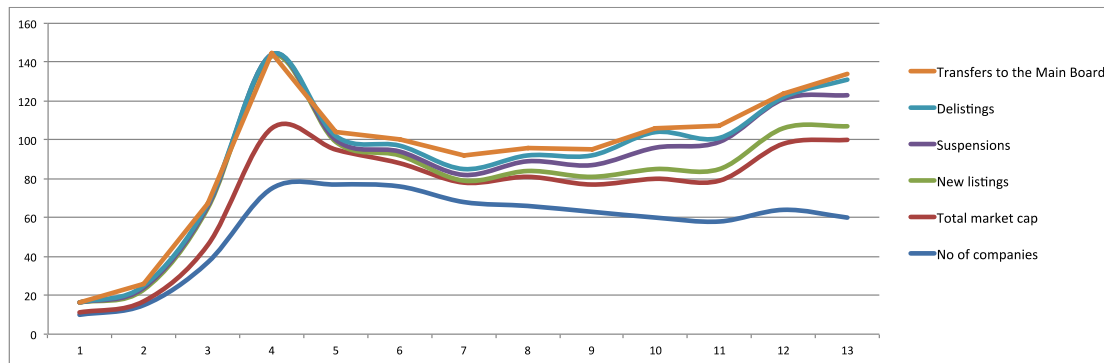
- IV. Human resource risks: Having overcome the scourge of apartheid, South Africa is now facing the problem of critical skills shortage due to few qualified people in the country been available to fill vacant positions. Hence, human resource risk shrinks many listed firm's ability to compete, innovate, grow and also hamper the future of some of these companies (Jacobs, 2013). This therefore entail that there is need for succession planning in these small businesses via skills development and training programmes such as learnerships and apprenticeships.
- V. Reputational risks: Research evidence reveals that negative news about a company can permanently damage the reputation of such firms, and could lead to poor sales and product boycott. Stakeholder relations and product quality control are thus an essential precondition that extends the longevity of a firm's product life cycle (AH-Vest, 2019). Also, listed firms are advised/expected to try as much as possible during strike actions (Accéntuate, 2015) not to allow protests to lead to either the death or injury of staff members, even if perpetrated by the police. It must be noted that when such actions occur, instead of being celebrated for their corporate development strides, people might view these companies as cannibalistic exploiters of the resources of their host communities. Likewise, internal leadership squabbles should be put at bay on time. While, gender and race relations should be promoted, so that ugly issues like racial discrimination, pay disparity, rape and sexual harassment does not damage the hard-earned reputation of companies, consequently spiralling into a bad reputational risk for them.
- VI. Exploration and mining risks: During early stages of operation, most extractive company's reserve and resource estimates are uncertain, this causes these firms to be exposed to some exploration and mining risks (Giyani Gold, 2016). Recent trends indicate that reputational risks could accelerate the passage of new legislation that either regulate or repossess already allocated property rights. Furthermore, non-compliance might lead to regulatory fines/litigation/sanctions, loss of property license and/or loss of reputation (Tiso Blackstar, 2019). In fact, the government might request for an upward review of already negotiated costs of acquired prospecting and exploration licenses, and mining concessions, if there are any disagreements between the two parties. Also, the impact of environmental degradation might

necessitate government officials to request for clean-up fee/fines/charges/bribes to be paid to the authority.

- VII. Political risks: Due to constant power struggle in South Africa, political risks might negatively impact on the performance of the JSE's AltX listed firms (Miller and Kim, 2017; The Heritage Foundation, 2020). Likewise, numerous firms are exposed to political instability, which weakens the rule of law and the protection of property rights in the country (Bosma and Kelley, 2019; Bosma et al. 2020).
- VIII. Miscellaneous risks: Apart from the abovementioned risks, other risks adversely influence the activities of listed firms. This could be as a result of their uninsurability, and might also arise due to labour disputes, invalidation or delay of orders and permits, foreign taxation, climate change activism and infrastructural limitation among others (Central Rand Gold, 2016; Tiso Blackstar, 2019). Also, commodity/price volatility, non-assurance of titles, geopolitical risks, environmental, health and safety risks, capital risk, settlement risk, lack of dividend payment guarantee, and management risks all have a negative impact on listed SMEs (Alphamin, 2019; Mine Restoration, 2019). Lastly, stock market risks can cause complexities that cannot be easily hedged, just like trading in derivatives is a highly volatile financial gamble. This and other factors expose listed firms to the risk of not raising adequate capital on the lower bourse, which is a major non-insurable exposure for SMEs (Tarver, 2015).

#### **4.6.5 REVIEW OF THE PERFORMANCE OF THE JSE'S ALT X**

Since its inception seventeen years ago the JSE's AltX have provided strong growth and aided the development of numerous small and medium-sized companies within South Africa and across the world. According to Brougham-Cook (2016) the AltX is the exchange with the world's highest migration rate from a small-cap secondary board to the main board. This implies that listing significantly improves the ability of firms that want to drive worthy and advantageous relationships with their customers, suppliers, shareholders, as well as other stakeholders given the tremendous success that they have achieved so far. Likewise, many listed firm's success could be linked with the adoption of frameworks that either meet or surpass global benchmarks on the AltX. Moreover, registered firms can effortlessly build capabilities that improve their entire value chain, yield above average earnings/returns for shareholders, empower communities, attract and develop talent, as well as ensure business and environmental sustainability, given the stringent prudential guidelines of the exchange.



**Figure 4.3: AltX listing information 2003-2016 (Source: JSE, 2019)**

The 100 per cent stacked line graph above (Figure 4.3) depicts the listing information of the JSE's AltX from its inception in 2003-2016. It shows that 34 transfers to the JSE main board occurred during this period out of 128 new listings on the AltX. Furthermore, this figure represents about 26.6 per cent of all new listings on the lower bourse. Unsurprisingly, most SMEs attribute the growth of the JSE's AltX to have a catalytic effect on small businesses in South Africa. However, during this period 37 delistings were carried out, representing about 28.9 per cent of total listings. According to Burger (2016) this is far below the failure rate of 75 per cent in South Africa. Brougham-Cook (2016) also pointed out that delistings do not necessarily imply failure, because between 70-80 per cent of SMEs delisted after positive development and growth of their business. It has been observed that most times, these companies form part of a buy-out and consolidation into a larger, growing company (Cheyne, 2016). While, the remaining 15 per cent were as a result of non-compliance with listing requirements or liquidation. Given the fact that SMEs are very entrepreneurial and self-motivating, it is such failure that leads them to their next success.

Besides the abovementioned positives about the AltX, 31 suspensions have occurred on the lower bourse due to the following reasons: Failure to submit annual financial statements timeously; Company going into liquidation and winding up; Failure to comply with the JSE's Listings Requirements by not submitting their provisional reports within the three-month period stipulated; Director's request that the company is in dire financial position and voluntary suspension; Due to its Scheme of Arrangement and as a result of business acquisitions not being successful; Failure to acquire viable assets within a 6 month period, subsequent to classification of the company as a cash shell by the JSE; Conflicting information regarding the finance of the company; The Company has effected a repurchase of a portion of its A class shares; and, The company or its major operating subsidiary (acting through the business rescue practitioner) has requested a suspension on the JSE due to business proceedings and the resignation of board members.

**Table 4.3: BEE Recognition Level**

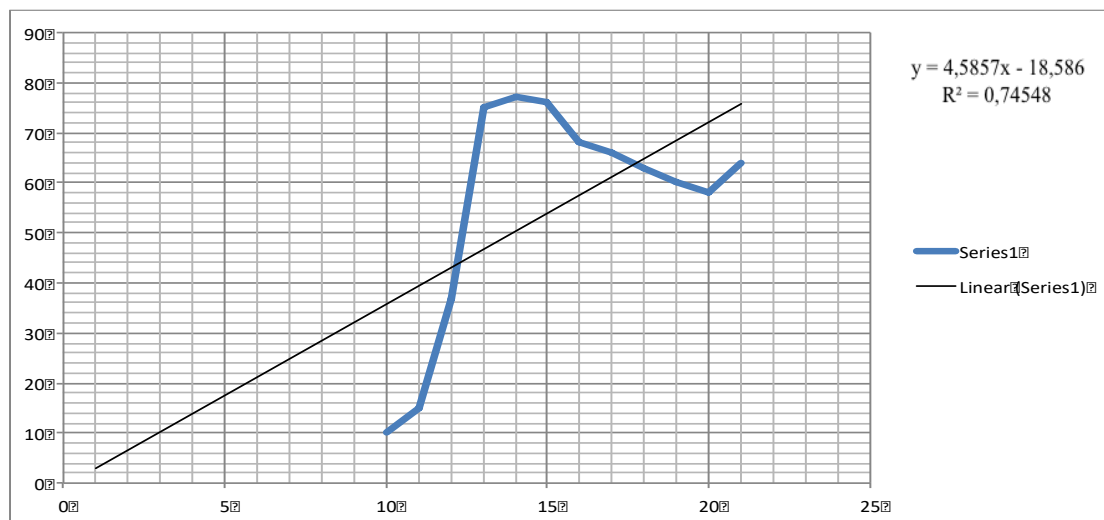
B-BBEE STATUS	SCORECARD POINTS	RECOGNITION LEVEL
Level One Contributor	≥100 points on the Generic Scorecard	135%
Level Two Contributor	≥95 but <100 points on the Generic Scorecard	125%
Level Three Contributor	≥90 but <95 points on the Generic Scorecard	110%
Level Four Contributor	≥80 but <90 points on the Generic Scorecard	100%
Level Five Contributor	≥75 but <80 points on the Generic Scorecard	80%
Level Six Contributor	≥70 but <75 points on the Generic Scorecard	60%
Level Seven Contributor	≥55 but <70 points on the Generic Scorecard	50%
Level Eight Contributor	≥40 but <55 points on the Generic Scorecard	10%
Non-Compliant Contributor	<40 on the points Generic Scorecard	0%

**Source: DTI, 2012**

Despite the setback of suspensions and delisting, every year on average about 8 new listings and 2 reverse listings are implemented on the JSE’s AltX. Consequently, the exchange has continued to surpass performance expectations with total market capitalisation reaching a peak of R 39.92 billion in 2016 (JSE, 2020). Table 4.3 above specifies the B-BBEE status, scorecard points and the recognition level as stipulated in the Broad-Based Black Economic Empowerment Amendment Act, 2013 (Act No. 46 of 2013). An examination of the annual reports of all the firms listed on the JSE’s AltX reveals that the vast majority of registered companies B-BBEE scorecard report hovers between levels 1 to level 7, with an average of a level 3 score. According to the BEE Navigator (2018) there are no direct financial penalties that could be applied to non-compliant businesses, but the system ensures that procurement managers and buyers favour SMEs that are compliant. This current trend successfully ensured that AltX listed companies secured an above average generic scorecard award in ownership, management control (MC), skills development (SD), enterprise and supplier development (ESD), and socio-economic development (SED).

Although, there exist some disparities in the generic enterprise’s classification, many AltX listed firms have been able to leverage on the opportunities available to complaint businesses. Based on size, there are three levels of B-BBEE compliance, as follows: Exempted Micro Enterprises (EME) for firms with an annual turnover of less than R10 million; Qualifying Small Enterprises (QSE) for firms with an annual turnover of between R10 million – R50 million; and Medium to large enterprises (M&Ls) for firms with an annual turnover of more than R50 million and above (Crampton, 2017). An appraisal of the performance of the JSE’s AltX reveals that by complying with the B-BBEE Codes of Good Practice many AltX listed firms are able to facilitate rapid economic transformation across the country through the use of preferential procurement to redress national inequalities. Furthermore, compliance assists disadvantaged communities with learnership opportunities that include

apprenticeships and internships, thus boosting the skill level of the country. Likewise, B-BBEE compliance have ensured that both private firms and government agencies patronise listed SMEs in their tendering process, application for licences, permits and public sector procurement. Also, legislative legitimisation implies that compliant companies on the AltX have access to tax incentives and financial grants – this helps to boost their performance significantly (DTI, 2012). Equally, listing ensures that SMEs inter alia comply with relevant legal provisions such as: Employment Equity Act, 1998; Skills Development Act, 1998; Skills Development Levy Act, 1999; and the Preferential Procurement Policy Framework Act, 2000.



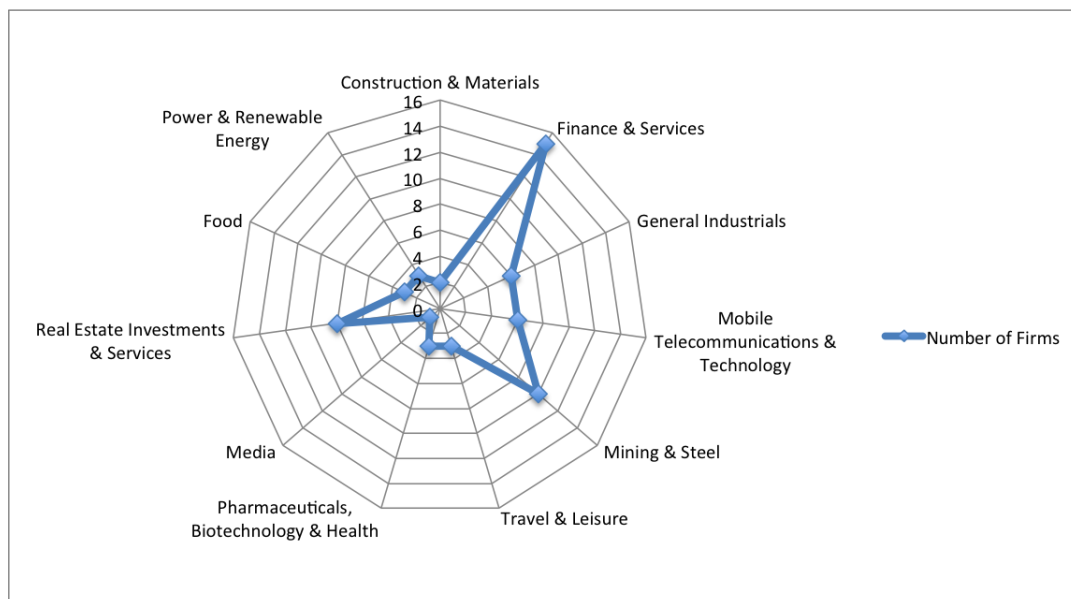
**Figure 4.4: AltX vs. Macroeconomic data (Source: Authors' compilation)**

Given the inconsistent findings in earlier studies, there is need to empirically ascertain/test the issues associated with the conclusions of similar studies, especially concerning problems with the data and methodology that were used in those research. In order to find out if there is a functional dependency between the AltX MarketCap, the number of AltX companies, the number of SMMEs, the TEA rate, GDP current prices, and the rate of economic freedom, all variables were jointly regressed over the period 2003-2015. The regression line in Figure 4.4 is represented by the equation  $y = 4.5857x - 18.586$  (i.e. Linear (Series1), its coefficient of determination 'R squared' value of 0.74548 suggest that 74.55 per cent of the total change in the dependent variable can be attributed to the independent variables. This implies that there exists a relatively strong relationship between the AltX and relevant macroeconomic indicators, which informs further study on the impact of the lower bourse on the performance of SMEs and entrepreneurship in South Africa. Although firms are facing complex socio-political/health issues and environmental challenges, how SMEs approach the grand challenges is tantamount to how successful they will be in future.

#### 4.7 REVIEW OF THE JSE’S ALT X IMPACT ON LISTED SMES

According to Birchall (2015) the SME sector is the ‘missing middle’, which has a fundamental role to play in the growth, genuine economic development and transformation of Africa. In South Africa SMEs constitute about 91 per cent of formalised businesses, and contributes 24 per cent of the GDP. Many contemporary studies point to the fact that SMEs in South Africa want to identify with the JSE’s AltX and also participate in the on-going financial intermediation in this sector of the economy because of the innumerable benefits they stand to gain (Bosma et al. 2020). As a matter of fact, listing on the lower bourse is not only a publicity stunt by SMEs but also a viable way to attract both local and international investors who are interested in high risk/profitable investment (Cheyne, 2016). Moreover, it has been observed that the JSE’s AltX bouquet of services significantly improves the ability of firms to drive worthy and advantageous relationships with their customers, suppliers, lenders and shareholders (Bosma and Kelley, 2019).

The World Bank (2015) emphasises on the need to integrate SMEs in the informal sector into the formal sector, so that the restrictions on small business activities in the financial market can be removed. This is because access to credit is a major constraint that hinders the growth of SMEs, and causes such firms to languish and stagnate amidst strong competition from both large local and foreign multinational companies (International Trade Centre, 2020). The AltX therefore offers SMEs access to finance through its array of innovative solutions to unlock various sources of capital. Consequently, the AltX financial intermediation impacts positively on the level of entrepreneurship via a process, which entails the ignition of innovation, the application of technology, diversification and the development of previously underperforming sectors of the economy (Siwela, 2020).



**Figure 4.5: AltX Sector Index Classification (Source: Authors’ compilation)**

The radar graph above depicts the sectoral index classification of the AltX. Further critical observation indicates that the finance & services sector has the largest number of listed SMEs on the AltX with 15 firms actively trading on the exchange, while the mining & steel sector has 10 listed registered SMEs. However, the real estate investments & services sector has only 8 listed firms on the lower bourse, which creates a huge gap and opportunity in the housing industry in South Africa. This could be geared up through active entrepreneurship participation in this sector of the economy, for instance, numerous real estate investment trusts (REITs) are now actively trading on the JSE's AltX. Similarly, 6 firms are listed on the lower bourse mobile telecommunications & technology sector, while the general industrial sector have only 6 firms that are listed on the AltX. Whereas, the food sector, the travel & leisure industry, and the pharmaceuticals, biotechnology & health sectors, as well as the power & renewable energy sector all have 3 firms each that are listed on the exchange, the media sector has just 1 listed firm on the AltX. Furthermore, despite the small number of firms that are listed on the JSE's AltX, it is anticipated that with increased awareness through media publicity, many unregistered SMEs would be inspired to join the lower bourse based on the success of the currently listed firms (JSE, 2019; 2020).

#### **4.7.1 THE JSE'S ALT X IMPACT ON THE CONSTRUCTION AND MATERIALS SECTOR**

In the construction and materials sector, the AltX has tremendously enhanced the liquidity and profitability of all the listed firms. For instance, Brikor was established in 1994 with an initial factory production of 15 million bricks per annum. However, the company now has production capacities in excess of 270 million bricks per annum, 40 million roof tiles per annum, 70 million pavers per annum, and 5,400 tons of clay pipes per annum (Brikor Limited, 2007; 2017). Furthermore, Brikor revenue increased to about R 292.7 million, after three years of consistent increase, while their total equity increased by 2.3 per cent to R 68.5 million, just as its the net asset value per share increased by 2.8 per cent to 10.9 cents per share. (Brikor, 2020). Even so, due to good management and corporate governance practices, the firms' total debt reduced by 3.50 per cent. According to the Chief Executive Officer of Brikor, Garnett Parkin (Brikor Limited, 2017) a sustained focus on the core business of the company that is supported by a sound financial and human capital management would ultimately position Brikor as a leader in the construction and materials sector. Equally important is the fact that the company has developed sustainable production processes (in its bricks and coal segment), which helps to reduce Brikor's carbon footprint, and uphold the BBEE stakeholder engagement certification score of level 6 with 13.10 per cent black ownership and 3.98 per cent black women ownership.

Similarly, the AltX have positively impacted on the operations of WG Wearne – a family business that was founded in 1910 and successfully listed on the AltX in 2006. In fact, the achievement of this firm has mobilised more SMEs to garner sufficient evidence about the benefit of listing on the lower bourse, since the firm used the capital generated on the AltX to grow both organically/via



acquisitions. Additionally, the groups revenue rose steeply from R 196 million in 2006 to R 512 million in 2016, although the total liabilities and borrowings of the firm decreased over time due to the restrictions on the trading quotas of company shares (WG Wearne Limited, 2016). Amazingly, WG Wearne has become the leading suppliers of aggregates, ready-mixed concrete, precast concrete products, mobile crushing and contracting services in South Africa. Despite the tough trading conditions in South Africa, the groups outlook remains optimistic with the increased focus of the ANC government on massive infrastructural spend specifically in the road construction sector of the economy. Also, the strict requirements of the AltX have ensured that the group trained, motivated and retained a substantial portion of the employees of the company. And at the same time, this ensured that the activities of the company took into account the economic, social and environmental impacts of their operation on the communities in which the group operates. Interestingly, WG Wearne attained a level 3 BBBEE certification (with a score of 76.19), underscoring a commitment to the development and upliftment of local stakeholders, which is line with the objective, vision and mission of the country's NDP.

#### **4.7.2 THE JSE's ALT X IMPACT ON THE FINANCE AND SERVICES SECTOR**

According to Borkum (2010) the implosion that occurred during the 2008 financial crises caused the global stocks market to tumble. However, due to the JSE's AltX superb surveillance capability aided by the soundness of South African banks many SMEs were saved across the nation from severe financial stress. In fact, the lower bourse has helped the finance and services sector to shore up their key fundamentals (including but not limited to the balance sheet size, income and cash flow statements etcetera). Consequently, financial firms such as African Dawn and Anchor Group have taken advantage of the potentials and increased visibility that the AltX offers (African Dawn, 2019). The case of African Dawn signifies how the AltX was able to transition a niche finance provider that specialises in micro financing, debtor discounting and structured property finance into a viable value adding company. Although the company suffered significant loan exposure in the property sector after the 2009 financial crises due to its small size, Nedbank's takeover of the majority shareholding of the company, has led to cost reduction, which has eventually transformed the firm to become an active investment holding company, that specialises in acquiring shareholdings in lucrative entrepreneurial businesses (African Dawn Capital, 2015; 2019). Interestingly, Anchor Groups' assets under management have also grown more than 10-fold (i.e. over R 60 billion with about 250 employees serving 12,000 clients both locally and internationally) since listing on the AltX in 2014. And as a socially responsible firm, the group and its employees collectively donated over R 1 million to fight the Covid-19 pandemic, which has negatively impacted families, businesses and the country in general. (Anchor Group, 2019).

#### **4.7.3 THE JSE's ALTX IMPACT ON THE GENERAL INDUSTRIALS SECTOR**

It has been observed that the general industrial sector of the JSE's AltX comprises of mostly mature firms that are seeking to leverage on the junior exchange's visibility in order to gain traction. Although among all the firms listed in this segment only Accentuate was able to increase revenue and profit after tax (as at 2016), nevertheless, many of these listed firms were able to use the capital that was raised from the market to position themselves on the continent via organic and acquisitive growth (Accentuate, 2019; CSG, 2019; PSV Holdings Limited, 2019). Likewise, it is interesting to note that Accéntuate has presence in 10 African countries (Accéntuate, 2015), Chemspec also has operations on the African continent, USA and Australia (ChemSpec, 2014), just as PSV Holdings has operations in Botswana, Zambia and the DRC (PSV Holdings Limited, 2016), while Rare Group has operations in Ghana, Zambia and Botswana (Rare, 2015). More so, Contract Services Group (CSG) Holdings has operations in Namibia, Malawi and Mozambique (CSG Holdings, 2015). As a matter of fact, these firms have gone beyond just profit making and now considers corporate social responsibility and the impact of their operations on the environment as an integral part of their long-term growth amidst rising tensions and labour crisis in the country. Besides, all the firms in the general industrial sector have been able to improve their B-BBEE rating, which at the moment hovers between levels 3-5, which is in line with South Africa's NDP.

Similarly, the acquisitive growth that listing on the lower bourse creates have led to expansion of these firm's operations into various sectors of the economy, such as the water treatment sector, paint manufacturing, industrial supplies, value-added wood based production, cryogenic and gas systems, geosynthetic linings, piping and fluid conveyance, scaffolding services, as well as general contract services (William Tell, 2011; ChemSpec, 2014; Accéntuate, 2015; 2019; CSG Holdings, 2015; 2019; Rare, 2015; PSV Holdings Limited, 2016; 2019). On the other hand, the continuous increments in the size of these firms have also led to over exposure of these businesses to their non-performing subsidiaries. Furthermore, this has led to the liquidation, suspension and the on-going divestment of all non-core activities of almost all listed firms in this sector. Consequently, there is need for an effective corporate governance structure in all listed firms, in order to ensure that the management board is made up of experienced professionals who can take all the necessary remedial action that can mitigate risks that affect SMEs; such as low cash availability, gearing, forex exposure and adverse macroeconomic conditions, as well as stringent regulatory and compliance requirements.

#### **4.7.4 THE JSE's ALTX IMPACT ON THE MOBILE TELECOMMUNICATIONS & TECHNOLOGY SECTOR**

According to the World Economic Forum (2016) the rapid change that is being experienced in the mobile telecommunications and technology sector is going to trigger the 4IR, because it harnesses exponentially the computing capability for the processing and storage of data. This trend has given rise to new

technologies such as the Internet of Things – IoT (i.e. wearables, connected cars, smart homes, businesses and cities), artificial intelligence, 3-D Printing, energy storage, autonomous vehicles, fifth generation (5G) mobile networks, biometric and machine learning etc. Relatedly, the JSE's AltX has tapped from the potentials of the on-going change in this sector via faster processing of its automated transactions, and has sufficiently assisted listed firms with significant funding opportunities that is now facilitating rapid growth and development in this sector. For instance, Alaris, Ansys (now Etion), ISA, SilverBridge and TeleMasters grew their portfolio with substantial profit after tax – PAT (Alaris Holdings, 2016; 2019; Ansys, 2016; ISA Holdings, 2016; 2020; SilverBridge, 2016; 2018; TeleMasters, 2016). However, Total Client Services made a loss after tax of about R 8.2 million (in 2013) in its integrated traffic law enforcement application business and is currently suspended from the lower bourse (Total Client Services, 2012).

Furthermore, listing on the JSE's AltX enabled Etion to expand its state-of-the-art production facility. As well as improve its in-house intellectual and technology capital in the design and development of engineering solutions for the defence and information security sector, together with the mining and industrial sector, and in the rail and telecommunications industry (Ansys, 2016; Etion, 2020). Likewise, ISA's managed security solutions have been implemented across Africa (ISA Holdings, 2016; 2020), while SilverBridge organic expansion of its operations across 12 African countries successfully grew the firm's life assurance business (SilverBridge, 2016; 2018). Similarly, TeleMasters was able to strengthen its core activities and capabilities in customer relations management systems in the mobile telephony and cloud-computing sector (TeleMasters, 2016). In like manner, Alaris was able to develop its RF technology from component to subsystem level (Alaris Holdings, 2016; 2019). Many pundits can authoritatively conclude that the AltX has impacted positively in this sector, because it is a critical force for growth, innovation, and disruption across multiple industries worldwide (Deloitte, 2017).

#### **4.7.5 THE JSE's ALT X IMPACT ON THE MINING & STEEL SECTOR**

The mining and steel sector plays an important role in the extraction and beneficiation of minerals. Since South Africa like most developing countries are factor driven economies, this sector (which is a key enabler of the automotive, rail, construction, energy, and infrastructure sectors of the economy) has a tremendous impact on mass employment, economic growth and sustainable industrial development (O'Flaherty, 2015). Consequently, the AltX is attracting capital to this sector, which is being ravaged by turbulent market dynamics that is exacerbated by labour union strikes, increased competition, regulatory changes, retrenchments and business closures. Due to the huge capital requirement that is required by SMEs that are operating in this industrial sector, the AltX has been position strategically to raise share capital and equity instruments for this industrial niche. In fact, many firms have utilised capital raised on the lower bourse to fund the group's prospecting and exploration of licenses and mining concessions, acquire new technology, as well as to finance the working capital requirements of these companies, in order to facilitate their

future growth (Kibo Energy, 2018; SilverBridge, 2018; Jubilee Metals, 2019; Mine Restoration, 2019; Chrometco, 2020; ISA Holdings, 2020).

Furthermore, good corporate governance standards have fundamentally ensured that companies that need to be rescued implement the turnaround strategies that safeguard their fortunes (Chrometco, 2020; ISA Holdings, 2020). For instance, Alert Steel invested in Express and Container stores, and acquired five Buildkwik stores as part of a strategy to augment the product offering of the company (Alert Steel, 2013). More so, Bsi Steel's listing on the AltX assisted the company to successfully restructure, and expand its footprints into 10 African countries, as well as Hong Kong. At the same time, the company was also able to attain profitability by reducing overheads and eliminating all loss-making operation (Bsi Steel, 2016).

As the second largest sector on the AltX, the impact of the mining and steel sector on the national economy is massive. However, contemporary events in this sector have warranted SMEs in this industry to match their success with environmental sustainability initiatives that can appease the ill feelings of their host communities (Mine Restoration, 2015; 2019; Buffalo Coal, 2016; Central Rand Gold, 2016; Chrometco, 2016; 2020). Therefore, companies listed in this sector are aggressively pursuing higher BBBEE status ratings, community trust share offers, environmental sustainability, improved health and safety standards, as well as ensuring a concise social and labour plan that can curb the destructive force of labour union agitations (DiamondCorp, 2016; Giyani Gold, 2016; Jubilee Platinum, 2016; KiboMining, 2016; Kibo Energy, 2018; Jubilee Metals, 2019). New challenges caused by climate change advocates have created entrepreneurial opportunities like mine restoration investments that have used their capital funding to acquire proprietary technology that can filter polluted water in acid mine drainages left behind by gold mines, as well as during coal fines processing and briquetting (Mine Restoration, 2015; 2019). Convincingly, the JSE's AltX has been able to assist listed SMEs to raise capital that these companies have used in the acquisition, prospecting, exploration, exploitation, evaluation, and development of steel, chrome, copper, platinum, cobalt, nickel, manganese, diamond, gold, coal and uranium resources in the country.

#### **4.7.6 THE JSE's ALT X IMPACT ON THE TRAVEL & LEISURE SECTOR**

According to South African Tourism (2016) the nation's tourism sector has not reached its full potential despite contributing over R91 billion to the economy and attracting about 8.9 million international visitors – which is a 6.8% decline in tourist arrivals. Increased competition for market share in the global market due to the use of highly sophisticated digital platforms and the unintended consequences of a new immigration regulation has adversely affected the country. Yet, many research findings have revealed that the anticipated growth in international and domestic tourism are positively linked with the creation of more jobs, since hotels and leisure companies etcetera benefit from the economic expansion that it produces. Unfortunately, despite all efforts made to push this sector forward, the Corona virus pandemic necessitated a lock down

that has crippled international visits, and also made local visits almost impossible/dormant (International Trade Centre, 2020).

Unswervingly, the AltX has assisted the leisure and hospitality companies with the required funding to expand their footprint and consolidate their position within and outside South Africa using innovative technology platforms. For instance, Quantum Property Group was able to acquire its 15 on Orange Hotel, as well as 12 luxury penthouses (Quantum Property Group, 2012), while Gooderson Leisure Corporation was able to acquire the Beach Hotel in 2015 and also implemented a robust property management system that optimises and enhances the online presence of the firm (Gooderson Leisure Corporation, 2016). Similarly, the International Hotel Properties built and acquired eight hotels in the UK with total available rooms of 976. In addition, its lease and owner operated hotels using established brands like InterContinental Hotel Group (IHG) and Hilton has solidified its presence in both the UK and Europe (International Hotel Properties, 2016). In fact, owning budget, economy and mid-tier hotels, lodges, as well as timeshare properties in both the corporate and leisure markets have become exceptionally profitable (PLG. 2018; Lighthouse Capital. 2019). At the same time, the adoption of the B-BBEE Codes of Good Practice have also helped to galvanise more patronage, and acceptance in the communities where they operate. Ultimately, listing on the lower bourse ensures the sustainability of many firms' business model in a very turbulent macroeconomic environment, where the [economic] rights of erstwhile disadvantaged groups are now being advocated.

#### **4.7.7 THE JSE's ALT X IMPACT ON THE PHARMACEUTICALS, BIOTECHNOLOGY & HEALTH SECTOR**

Adão (2014) posited that South Africa's pharmaceutical market was worth \$3.9 billion in 2013 and will grow by an average of 6 per cent annually to \$5.1 billion in 2018. This makes it the largest pharmaceutical market in Sub-Saharan Africa, with generics that provide lower cost drugs such as anti-retroviral (ARV) medication which helps to combat the HIV/AIDS pandemic accounting for about 60 per cent of the overall market share. That said, South Africa's biotechnology and health industry, although small is incredibly tenacious considering the enormous healthcare challenge facing the country/region/continent. Comparatively, South Africa has the most advanced life sciences manufacturing base in Africa. In fact, all the global generics firms in Africa like Aspen, Adcock Ingram and the biotech giant Genius Biotherapeutics have their headquarters in South Africa. However, very few indigenous firms operate in this sector of the economy, probably due to the huge capital outlay that is required to function, as well as the exorbitant research and development costs that is associated with this highly skilled industry. The AltX therefore offers listed SMEs with the opportunity to raise cheap funds, which will enable them to expand either organically and/or via acquisitions.

Congruently, all of the listed firms on the lower bourse in this sector have been able to focus on organic growth through an increase in their branch network and subsidiaries. Hence, they can thus increase their geographic network and

also consolidate on their pre-listing success. Beige Holdings, which is the first listing on the AltX, was able to make five acquisitions, before being acquired by Lion Match (Beige Holdings, 2014). Its contract manufacturing and distribution business in cosmetics, soaps, household products, toiletries, pharmaceuticals, nutraceuticals and allied products is being restructured to increase profitability. Also, Advanced Health day hospital business has consistently facilitated the delivery of quality and affordable healthcare in both South Africa and Australia via the provision of short-procedure surgical facilities in 16 sites (Advanced Health, 2016; 2019). Furthermore, Imbalie's independent health and beauty brand franchise business expansion has led to the opening of over 150 salons and pharmacies across the country (Imbalie Beauty, 2015; 2020). Its flagship stores such as Placecol skin care clinics, Dream Nails Beauty Salons, Perfect 10 Nail and Body Studios, as well as the recently acquired Prana Products brand have matured, and can now be profitably exported and replicated across Africa and advanced markets. However, there is need for more SME listing to cover areas such as the manufacture of medical devices, drugs, vaccines, veterinary medicine (with special reference to Ebola hemorrhagic fever, Corona virus), diagnostics, therapy, telemedicine, biomarkers, biomaterials, biosimilars and stem cell research. Furthermore, Imbalie beauty salon business faces a significant risk due to the implementation of the social distancing protocol within the salons, obviously leading to less turnover/sales (Imbalie Beauty, 2020).

#### **4.7.8 THE JSE's ALT X IMPACT ON THE MEDIA SECTOR**

South Africa has Africa's largest mass media sector. Up until 1994, the country had a flourishing alternative press encompassing community broadsheets, bilingual weeklies and even student 'zines' and xeroxed samizdats. Available data shows that press freedom is quite high in the country following the abolition of censorship and the introduction of the Bill of Rights that guarantees every citizen's fundamental human rights, which includes freedom of the press and media. Reporters Without Borders' (2017) World Press Freedom Index ranks South Africa as the 31<sup>st</sup> country in the world for free press, thus indicating an 8-place movement upwards from the 2016 index ranking. However, recently, the introduction of the Protection of Information Bill and the proposed Media Appeals Tribunal has caused disagreements, with allegations that press freedom is under threat (Rossouw, 2010).

Currently, Moneyweb Holdings is the only SME in the media sector that is listed on the JSE's AltX. The company is a holding company of an integrated media group with substantial interests in the digital, broadcast and online print publishing fields where it provides business, financial and investment news and tools (Moneyweb Holdings, 2016). Due to the company's exploitation of the advantage of being a first-mover in this sector, it has continued to rake in huge profits and revenue, despite not securing loans to finance its operations. The outlook of Moneyweb Holdings is positive with growth expected in its video unit, The Investor, its radio platforms and from hosting events such as the Money Expo and its flagship publication, The Investor magazine. Furthermore, there is an overwhelmingly positive forecast that SMEs intending to list in this sector would easily exploit the huge investor confidence and the capital raising

opportunities that the lower bourse offers. Unsurprisingly, the company is now a subsidiary of African Media Entertainment (AME) which is a JSE listed entity.

#### **4.7.9 THE JSE's ALTX IMPACT ON THE REAL ESTATE INVESTMENTS AND SERVICES SECTOR**

Recent studies indicate that declining oil and commodity prices noticeably have a detrimental effect on both aggregate demand and property prices in Africa, consequently concerted efforts ought to be geared towards the diversification and stimulation of the national economy (DLA Piper, 2017). Although the massive industrialisation of South Africa remains hampered by inadequate infrastructural amenities, rising population growth is compensating for these shortcomings and creating vast opportunities in the property market. In the same vein, the country's critical housing shortage has risen above 2 million homes nationally. A huge prospect also abounds in the lower end affordable housing sector where the banking sector seeks to invest over R42 billion (National Planning Commission, 2012). Expectedly, the AltX has been able to strategically position itself as an incubator for small businesses in this sector. Besides, the lower bourse has consistently assisted in raising capital for this third largest sector on the exchange (Visual International, 2018; Atlantic Leaf, 2019; Lighthouse Capital, 2019; New Frontier, 2019; Newpark, 2020; Sirius, 2020). Interestingly, this fund has been used to make acquisitions and build new homes, which are highly yield accretive. Thus, in the process simultaneously guaranteeing the income, liquidity, tradability and also the growth of registered firms by way of their exposure to larger markets (in Europe, Asia and America).

As a matter of fact, all the SMEs in this sector invest in properties across the country and abroad particularly in Western Europe, North America and Australia. Currently, the major focus of these companies is to maintain a balanced strategy of investing in industrial, retail, residential and commercial properties either directly or through the holding of property securities. Atlantic Leaf acquisition of Seahawk Investments in 2014 was consummated in furtherance of its interest in warehouse properties in the UK, which has led to the acquisition of 49 properties valued at GBP 376 million and a promotion to the JSE Main Board (Atlantic Leaf, 2017; 2019). Likewise, Greenbay target of opportunistically good quality undervalued real estate assets in Europe led to the acquisition of Planet Tus shopping centre in Koper, Slovenia in 2016 (Greenbay, 2016; Lighthouse Capital, 2019). Similarly, Lodestone interest in yield-enhancing assets led to the acquisition of an industrial property 26 Yaldwyn Road, Gauteng from Silcprop proprietary limited in 2015 (Lodestone, 2015). Besides, Sirius real estate mixed-use flexible workspace focus in Germany is providing a combination of conventional and modern flexible workspaces comprising a portfolio of 65 business parks, which have an absolutely high accretive relationship to earnings in excess of €1 billion (Sirius, 2015; 2020).

Furthermore, New Frontier properties exploitation of its status as a REIT enabled it to acquire Cleveland centre, Coopers square and Houndshell

shopping centre in the UK and rake in a profit of £2.698 million in 2015 with total portfolio valuation now GBP 119.00 million (New Frontier, 2015; 2019). While, NewPark REIT strategic ownership of properties such as the JSE building and 24 central in Sandton raked in R56.1 million in just one year of listing on the AltX (NewPark, 2016; 2020). Nevertheless, RBA Holdings the major supplier of affordable quality homes in South Africa is on course to deliver about 1000 homes per annum, and inspiring B-BBEE companies such as Siweziwe Property Holdings to assist in the development of low-cost homes (RBA Holdings, 2014). Correspondingly, Visual International acquired Mosegedi & Associates (Pty) limited in 2017, and is presently consolidating its financial position through viable lease agreements in its Stellendale property and Dipula facilities where it has developed over 500 homes (Visual International, 2016; 2018).

#### **4.7.10 THE JSE's ALT X IMPACT ON THE FOOD SECTOR**

The JSE's AltX has a tremendous impact on listed SMEs in the food sector. In particular, the consolidated management and reporting structures of these firms encourages SMEs to perform optimally (Gold Brands Investments, 2016; AH Vest, 2019; Nutritional Holdings, 2019). For instance, the best performing company on the JSE's AltX in 2016 was Gold Brands Investment, the company within less than a year of listing was able to increase its revenue to R235.5 million, yielding a profit after tax of R9 million (Gold Brands Investments, 2016). More so, the company's fundamentals showed that the firm was able to open over 331 franchise stores via the acquisition of BlackSteer in 2015 and Mama Chakas in 2016. Thus, strategically expanding their footprints to seven countries, with expansion plans into Greece, Cyprus, Mauritius, USA, Ghana and Mozambique in the pipeline. Gold Brands Investment management concept of investing in high grossing, fast-moving franchises is based on the premise that franchising has a mere 10 per cent failure rate, when compared to 90 per cent for SMEs, which is paying off.

Furthermore, AH Vest's establishment of a new factory in Eikenhof, South Africa scaled up its manufacturing and sale of food products, and also increased the firm's revenue and profitability position (AH Vest, 2015; 2019). Similarly, Nutritional Holdings limited listing on the AltX positively impacted on the company's revenue. This in turn empowered the firm to acquire Impilo, the Nutritional Foods and the rights from Edge to Edge to manufacture and promote the Imuniti pack in South Africa (Nutritional Holdings, 2016; 2019). Besides, AH Vest's manufacturing of high-protein fortified nutritional food products and supplements, as well as pharmaceutical products and complementary natural medicines, has strategically positioned its distributive capacity towards drought affected and poverty-stricken parts of Africa (AH Vest, 2015; 2019).



#### **4.7.11 THE JSE's ALT X IMPACT ON THE POWER AND RENEWABLE ENERGY SECTOR**

Africa currently has about 620 million people living without access to electricity, despite having the potential to produce 5 per cent of the world's energy need<sup>11</sup>. The International Energy Agency (2014) stated in its Africa's energy outlook forecast that about one billion inhabitants of Sub Saharan Africa would gain access to electricity by 2040. However, rapid population growth will cause 530 million rural dwellers to be left out. In South Africa rolling blackouts and/or power cuts is anticipated to cause water supply shortages, lower farm yield, as well as reduced national productivity and GDP growth. But the regional picture is not too gloomy because most listed SMEs have capitalised on the huge demand for power, to initiate viable high growth projects in the country.

Furthermore, the Global Asset Management company is therefore focusing its technologies in rubber recycling into oil (Envirotek), plastic recycling into oil (Plastic Green Energy – PGE), and concentrated solar power with storage (Heliosek) in Southern Africa (Global Asset Management, 2016; 2018). Correspondingly, IPSA Group was able to build the first privately financed independent gas-fired power station in South Africa. And as a matter of fact, its Newcastle cogeneration power plant produces both steam and electricity, which is both energy efficient and Carbon Credit eligible (IPSA Group, 2014). Additionally, Renergen listing as a SPAC on the lower bourse enabled it to invest in high growth projects and opportunities in the alternative and renewable energy sector of the economy. For instance, Renergen acquisition of Tetra4 Proprietary limited updated its independent reserve valuation to about R6.6 billion (Renergen, 2016; 2020), while Kibo Energy is currently developing 1,250 MW of power generation in four African countries (Kibo Energy, 2018). Over and above that, there is a favourable outlook in this sector due to the vast potential of untapped resources, which has not been aptly exploited because of the aging infrastructure in Africa. Also, government support across the globe to reduce carbon emissions, constantly fluctuating oil price, intensive resource extraction, urbanisation, the demand for connectivity and the diversification of the industrial base creates huge prospects in this sector.

#### **4.8 HYPOTHESES FORMULATION AND DEVELOPMENT**

A thorough perusal of the literature review section of this research illuminates salient points that confronts numerous SMEs who are either listed on the JSE's AltX or intends to register their companies on the lower bourse. Having discussed the contending issues in previous studies such as the areas of compromise and discord amongst scholars, as well as the gaps that were uncovered in this immersive process, this section aims to present the major research questions and hypotheses of the study, starting with the main arguments that are vital to the achievement of the objectives of this thesis. Given that the epistemological paradigm that was adopted in this research is the mixed methodology approach, it is hoped that the theoretical model of this

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<sup>11</sup> In reality, Africa is basically power-less, but resource-full.

study would employ appropriate theories that have extensive scope of use beyond this research. And that the constructs identified in the conceptual framework would spur rigorous research in this research area. More so, because measuring performance and the level of entrepreneurship can be both a subjective (i.e. qualitative) and objective (i.e. quantitative) exercise, there is need to adopt an unbiased stance that guarantees the validity and reliability of this study – in the long run. Consequently, this warranted the formulation of the research hypotheses, which entailed further explanation of the research questions, in order to identify and specify the main constructs of this study in empirically measurable/testable forms. Thus, the development of the hypotheses ensured that key variables were operationalised for this process to take shape in subsequent chapters. As a result, this approach leads to the adoption of a comprehensive ethical procedure in data collection and analyses later on.

#### **4.8.1 MAIN RESEARCH ARGUMENTS AND QUESTIONS**

Recent empirical studies have contended that the establishment of the JSE's AltX is evidently aiding the growth of SMEs in South Africa, and also helping the government to achieve its empowerment objectives. That said, like similar studies, the findings of various scholars indicated a great divide exist between them. This is because some of these studies conclude that its contribution has been positive (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015), while others stood at a middle ground (Beneke, 2016; Pelcher, 2017; Makoko and Muzindutsi, 2018). However, some researchers believed that its performance has been negative overtime (Mlonzi, Kruger and Nthoesane, 2010; Harvey, 2016). Imenda (2014: 185) observes that even though scholars share the same accessible sample population, the different viewpoints/perspectives taken by researcher's influences how they argue, formulate problems and interpret events overtime. Measuring the impact that the JSE's AltX has on listed firm's performance and entrepreneurship is thus a daunting task that necessitates the formation of formidable arguments/questions.

Having thoroughly reviewed relevant literature studies, in tandem with the problem discussion, and after considering the aims of this study, the following research questions need to be answered in order to shed more light on this phenomenon. Furthermore, argumentation is considered an important aspect of building a research question in this thesis because it is used to support/build theories that add to our understanding of how the JSE's AltX impacts on the performance of listed firms, as well as advance the aggregate level of entrepreneurship in South Africa. From the extant literatures reviewed in the preceding chapters the researcher found out cavities in existing studies and therefore raised major arguments to explain this phenomenon. After comparing and contrasting the reviewed studies to this research setting, four research arguments were raised. This subsequently led to the development of four other pertinent research questions, which guide the ensuing empirical phase of the current study. Consequently, *ceteris paribus* (i.e. all things being equal) the research arguments facilitate the development of the research questions, which

later led to the formulation of both the theoretical model and conceptual framework for this study. The succeeding discussion presents the research arguments and related research questions in a detailed procedural format below.

#### **4.8.1.1 ARGUMENT I: THE JSE'S ALT X IMPACT ON FIRM'S PERFORMANCE**

According to Akpa, Oduguwa, Onu, Kamaldeen and Ishola (2017) measuring organisational success or performance is an arduous task considering the nature of people and organisations. Furthermore, overtime this process is expected to bring about the formalisation/transformation of many spontaneously formed informal organisations – due to sound management/corporate governance that definitely ensures their organic evolution and growth. Prior studies utilised Finance and Investment Management, Financial Management, Econometrics, Financial Economics and Economic Theory as a point of departure to form the basis of their analyses and conclusions (Mlonzi et al., 2010; Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015; Beneke, 2016; Harvey, 2016; Pelcher, 2017; Makoko and Muzindutsi, 2018). Based on the theories of the firm/organisation such as the classical or traditional theory of organisation, the neo-classical theory of organisation and the systems view of organisation theory various approaches has been devised to measure organisational success/performance. These concepts are based on the notions that are presented by the behavioural school (which is made up of both the human behavioural school and the social system school), as well as the empirical school, the decision theory school, the quantitative school and the management process school (Akpa et al., 2017). As a management science research this study used mathematical models, symbols, processes, relationships, empiricisms, simulations and measurable data to arrive at the key findings/conclusions of this research in respect to the JSE's AltX impact on listed firm's performance.

Evidence from extant literature on entrepreneurial finance suggest that a compounding problem of finance makes SMEs to use ideas from the TOT and POT to leverage on their corporate financial portfolio via a critical path that yields optimum profit from short to a long-term period (Modigliani and Miller, 1958: 1963; Tarver, 2015). Similarly, Gilson and Black (1998) posited that stock exchanges like the JSE's AltX assist SMEs to raise capital, mobilise savings via IPOs/new share offers, facilitate firm growth, encourage profit sharing (when the share prices increase), and also promote corporate governance in listed firms. Cheyne (2016) affirms that a listing on AltX offers companies several benefits, including but not limited to: access to a large pool of investors; the provision and accessibility of greater opportunities for profiling, and enhanced relations with banks, suppliers, distributors and customers. Besides, aiding listed firms to retain and attract talent through employee share options schemes. This differentiation strategy sufficiently limits investors' sentiments because apart from raising capital for these businesses and improving their

entire processes, listing distinguishes them significantly from their unlisted peers.

Despite the aforementioned benefits of the JSE's AltX on listed firm's performance, the findings of some notable scholars and researchers have been inconsistent with earlier conclusions from literature studies. Evidence from the statistical analysis of the JSE's AltX data carried out by Mlonzi et al. (2010) revealed that there is substantial negative share price reaction to earnings announcements on the AltX stock market. The AltX also showed the weak-form of market efficiency. In the same vein, Harvey (2016) concludes that when considering the board of listing, the AltX proved to have the most company failures as well as the worst long-term performance. He also found that companies with a smaller age before listing displayed worse long-term underperformance and were more likely to fail. Consequently, the conflicting findings about the impact of listing on the JSE's AltX on SME performance in South Africa justify an elaborate empirical investigation. Therefore, the current study rightly contends that due to a paucity of research in this area, the actual performance-linked advantages that are associated with small business listing are yet to be examined in South Africa. Since past studies reached a conclusion based on only quantitative data, there is clearly a lacuna that is existent in the literature that necessitates the researcher to study this phenomenon in a greater detail. This leads to the first research question pertaining to this study:

***Research question 1: Does listing on the JSE's AltX impact on firm's performance?***

Although a few studies have identified the impact of listing on the JSE's AltX on SME performance, this question intends to elaborate on the work of these scholars/researchers from a management science standpoint. As stated earlier the application of the findings of these studies have been vastly limited due to their narrow focus in finance, investment management and economics. This informs a study in this area. Furthermore, the core objective of this question is to identify the foci areas that listing on the JSE's AltX impact on the performance of SMEs in South Africa, especially with respect to their level of profitability, the job creation levels and the revenue earning potential of listed firms, as well as the quantum of growth (whether local or international expansion) among other things that it brings to small businesses in South Africa. The answer to this question would definitely appeal to both unlisted and listed SMEs, policy makers, scholars and researchers, as well as inform policy recommendations for the JSE, industry and government agencies.

**4.8.1.2 ARGUMENT II: THE RELATIONSHIP BETWEEN THE JSE'S ALT X LISTED FIRMS AND THE LEVEL OF ENTREPRENEURSHIP**

In line with the objectives of the NDP, it is stated in entrepreneurship literature that SMEs/entrepreneurs are prolific job creators which have the capacity to half the rising unemployment rate in South Africa. Likewise, SMEs provide ancillary support to large businesses and also spur economic growth across the country. This notion about small businesses puts them on the front burner

of policy debates nationwide. Fatoki (2014) finds that the entry of new small businesses into the entrepreneurial space holds the only real prospect of sustainable large-scale job creation and economic growth in South Africa. Similarly, Schumpeter's (1934) study notes that SMEs are the vital force behind the progress of capitalism, commerce, and innovation via the equilibrium distorting/adjustment process of creative destruction, which creates opportunities for economic rent to be tapped by entrepreneurs. According to Leboea (2017) macro-environmental factors, lack of skilled labour, low levels of entrepreneurial education, the inability of SMEs to use technology in their production process, poor regulation, laws and policies, as well as the challenges of globalisation led to low levels of profitability or even loss and/or closure of many small businesses. From this study's literature review, it is obvious that these factors are all manifestations of the competitive regenerative process that was mentioned by Schumpeter. And also due to the problem of poor access to finance, because with adequate funding most of the problems confronting small businesses in South Africa can be easily readdressed.

Furthermore, existing SME literature have attributed the perennial issue of lack of finance confronting many small businesses in South Africa as the major cause of the high SME failure rate in the country. This warrants researchers to first of all, critically understand the causes of business failure, in order to assist in proffering solutions that can remedy the current trend. As illustrated by Nemaenzhe (2010), the failure rate of between 70 – 80 per cent typifies the odds that lies against potential and existing entrepreneurs in South Africa. Among the problematic factors that he emphasised includes the lack of experience and inadequate planning in finance and marketing, income constraints and cash control. Clearly, listing on the JSE's AltX would assist SMEs to mitigate these problematic factors, and also lower the predominantly high failure rates nationwide. Besides, the strict compliance requirements for listed firms ensures that registered SME's management and board adhere to corporate governance codes in a transparent manner that facilitates fair reporting, as well as safeguard company success. Expectedly, in the long run, listed companies would play a substantial beneficial and/or impactful role in the economy via their job creation, income redistribution, poverty alleviation and contribution to the economic growth rate of this country.

Herrington, Kew and Mwanga (2017) rightfully asserts that South Africa has been ravaged by a series of political and economic setbacks that have obvious consequences on the level of entrepreneurship across the country. A more gruesome reality is the fact that unemployment levels has peaked at 27.6 per cent, similarly, the youth portion of that figure has also skyrocketed to about 65 per cent. Arguably, this negative trend is triggering policy debates and reforms that has far-reaching consequences, particularly because it concerns ways and means to remedy the situation and also grow the economy of South Africa (Bosma and Kelley, 2019). Without mincing words, the ANC government has prioritised the SME sector and made firm commitments via its state apparatus, and have also strengthened existing agencies, and have even established new ones and departments like the DSBD where niche services are required in support of entrepreneurship. However, despite the core mandate of these

ministries, department and agencies (MDAs) to support entrepreneurs, they are yet to begin to yield their primary objective of building and promoting new businesses, and supporting the growth/expansion of existing firms. Clearly, this is the reason why private sector led effort like the intervention in the SME sector by the JSE's lower bourse (which is known as the AltX) is very crucial in readdressing the problem of a downward spiral in entrepreneurship levels and growth in South Africa.

Furthermore, South Africa ranks low in measured levels of entrepreneurial activity such as the TEA rate, established business ownership rate, business start-up rate, innovation, and internationalisation. Similarly, South Africa is rated high in business discontinuance rate when compared to the rest of the world estimates. Many SME pundits were not surprised when the GEM study team in South Africa asked this question in the South Africa Report 2016/2017, "Can Small Businesses Survive in South Africa?" The answer is plausibly yes. But for there to be significant progress, there is need for scholarly attention that would provide solutions, as well as a nuanced treatment for this phenomenon. In 2016 two-thirds of businesses (i.e. 67 per cent) closed for financial reasons such as their business "were not profitable, or because they encountered problems in accessing financing to sustain the business" (Herrington, Kew and Mwanga, 2017: 6). Likewise, a quarter of entrepreneurs that exited encountered problems accessing finance, which is three (3) times more than the average for entrepreneurs exiting businesses in efficiency driven economies (8.8%). Conclusively, access to finance is definitely a significant constraint for small businesses due to its profound effect on business sustainability.

As at 2016 (which is the baseline for this study), the JSE's AltX has helped small businesses to raise about R48.9 billion. Although this is far below the R11.7 trillion market capitalisation of the JSE, this demonstrates the commitment of the lower bourse support for SMEs (Heerden, 2015). Likewise, from 2003-2016 out of the 128 new listings on the AltX, 34 transfers to the JSE main board occurred during this period, while 37 delistings occurred during this period, representing about 28.9 per cent of total listings on the lower bourse. As Burger (2016) observes, this is far below the SME failure rate of 75 per cent in South Africa. Similarly, Brougham-Cook (2016) points out that delistings do not necessarily imply failure, because between 70-80 per cent of SMEs delisted after positive development and growth of their business. This statement is affirmed by Cheyne (2016) as she opines that most times, these companies form part of a buy-out and consolidation into a larger, growing company. But (it must be noted that) many registered firms also complain about the high fixed cost base relating to listing and compliance matters which are time consuming and can lead to business insolvency and eventual liquidation.

Interestingly, the recent impacts of the worldwide globalisation of commerce is also creating the problem of stiff competition for small businesses in South Africa because their products and services have to compete with large companies within South Africa and foreign businesses outside the country. A thorough analysis of this trend shows that it is worsening the business success

rate figures across the nation, regardless of SME's estimated contribution to the GDP of South Africa being about 36 per cent of the total aggregate (Herrington, Kew and Mwangi, 2017). Consequently, in order to curb the downward spiral in entrepreneurship (given the current poor funding options), there is need to use the power of numbers (of shareholders/investors) to ignite small firms to unleash their creative potentials nationwide via listing. Similarly, since the AltX offers 24 hours, 5 days a week state of the art online trading platform and market that is accessible from anywhere in the world (JSE, 2020), SMEs/entrepreneurs can tap into the potentials of both local and foreign investors from all over the world. The purchase of listed firms shares by an all-inclusive demographic base that includes young and old persons, women, men, institutional investors etcetera is expected to improve the perceived opportunities/capabilities, as well as increase the level of entrepreneurial intentions that would drive growth, spur innovation/creativity, entrepreneurship education and development in South Africa.

Given that the JSE's AltX was designed to cater for the needs of small and mid-sized high growth companies, it is anticipated that listing of SMEs on the lower bourse would boost the levels of entrepreneurship in South Africa. As indicated in the literature review, there exist a relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa, which can be either directly or indirectly related or causative in nature. Since research in this area is relatively few in South Africa, it is not clear whether there is a correlation (be it positive, neutral or negative) between the two phenomena. Hence, this warrants more research to be carried out in this field of study. Some researchers have asserted that listing would boost registered SMEs trade levels to the extent that the media attention given to this firms would attract more enthusiast/investors to take up entrepreneurship as a career option, thus in the process increasing the level of entrepreneurship in South Africa. From the above discussion, it becomes imperative to argue that the linkage between listing on the lower bourse and its impact on the level of entrepreneurship is either unknown, inconsistent and/or inconclusive in numerous studies. Based on these arguments, the second investigative research question for this research is:

***Research question 2: What is the relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa?***

The answer to this question will explain if there exist a relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa, building on existing theoretical perspectives in the literature review section of this study. Reviewed literature studies suggest either a positive, neutral or negative association between the two phenomena. Concurrently, the answer will inform findings relating to whether there exists a relationship (i.e. correlation) and causation (i.e. cause and effect) between them.

#### **4.8.1.3 ARGUMENT III: INCREASING SHARE CAPITAL LEVELS INFLUENCE ON THE EXPANSION AND PERFORMANCE OF LISTED FIRMS**

Stein, Goland and Schiff (2010) study stated that the unmet need for SME credit stands at about \$2.5 trillion in emerging markets, and also considered inadequate SME financing as a significant constraint to business birth rate or start-up, as well as the main cause of business discontinuation. Consequently, share capital listing have been a beneficial expansionary/exit strategy to many young and maturing firms, since it enables these SMEs to raise funds and to comply with complex reporting/governance standards, which is in the best interest of all stakeholders. As rightly posited by Modigliani and Miller (1958: 1963), firms are motivated to use debt rather than equity instruments because debt payments are tax deductible and less risky in the short run. However, in the long run it becomes more expensive thereby necessitating a mixture of both instruments, based on the WACC (Tarver, 2015). Therefore, both the POT and TOT are based on the premise that firms leverage on their corporate financial portfolio using a critical path that yields optimum profit from short to a long-term period. According to Myers and Majluf (1984) many new/young firms are forced to use internal financing to fund their new ventures due to their inability to access capital finance, but as time goes by, they get mature, expand their operations, and this consequently led to a depletion of their resources, which then makes debt financing a more attractive optimal financing option for them. However, as more debt is piled on existing loans the firm approaches bankruptcy, hence, equity/share issuance becomes sacrosanct (López-Gracia and Sogorb-Mira, 2008). At this point investors seek part (i.e. share capital) ownership and control structure for these firms in exchange for funding.

Due to the fact that many SMEs operate in isolation, and are trapped into uncompetitive production patterns which make them to be unable to approach dynamic business partners that can bring in new expertise and innovation, there is a great need for small businesses to list, and also, scale up based on sound market intelligence (UNIDO, 2019). Empirical and literature evidence suggests that in the long run, when these firms begin to derive the benefits of economies of scale, they would be able to produce goods and services in quantities and qualities needed to become profitable over time. That said, it becomes pertinent to ask the question, "Why do SMEs list their shares on the JSE's AltX? A comprehensive study carried out by Harvey (2016: 24) clearly state that the main reasons for listing on the lower bourse includes the following: to raise spasmodic funds which yields a massive capital base structure that can be used to drive both accretive growth and development in a firm; to diversify a firm's source of finance using a secure alternative medium; to use the expected share capital allotment to develop strategic alliances, mergers and acquisitions; to raise an SME's business profile (i.e. corporate image) and create brand awareness (that entails the promotion of company visibility to all stakeholders); to serve as an exit strategy and to unlock value for shareholders, as obligated by a holding company in an unbundling firm; to benefit from tax breaks and manage a succession plan; to benchmark the price for BEE transactions and avoid empowerment discounting, and also to drive reorganisation, governance



and compliance, retirement of debt, as well as to gain recognition/acceptance of the business strategy used by a firm; lastly, to facilitate the establishment and management of employee/community share schemes, as well as to improve an SME's credibility with stakeholders due to proper and timely disclosures.

Consistent with the expectations of successfully listed companies on the AltX, Ungerer, Gerber and Volschenk (2015) observes that most of these firms were able to pursue growth strategies that led to firm expansion. This include but are not limited to activities such as: the closing of joint venture alliances; as well as facilitating mergers; acquisitions; exporting; franchising; and/or licensing agreements with other companies operating within and outside the country. Similarly, Harvey (2016) observes that listing is a strong signal of possible future growth to either institutional or private investors, indicating whether a company wants to expand its current market or looking to diversify into other related markets. In the same vein, Martinez and Perron (2004:15) find that the attraction of top talent to registered firms was further reinforced by the use of share-based compensation to reward, retain and attract new employees to these companies. Thus, this helped to increase employee motivation, productivity and loyalty, while also assisting to keep top talent without incurring cash expenses. Apart from the fact that listing almost guarantees registered firms increased market-based value, liquidity, credibility and marketability, it also has a net positive impact such as offering ancillary advantages like improved management and an optimal financial structure. Therefore, causing them to enjoy increased bargaining power in transactions, plus intangible benefits like goodwill, improved credibility with customers, banks, suppliers/vendors and other key stakeholders (Harvey, 2016).

Literature reviews also find that listing can be an upheaval task with tumultuous consequences. This is probably because the disadvantages of going public might outweigh the benefits of listing. For instance, the requirement for public disclosure may expose a quoted company's secrets to competitors, who would then use it to their own advantage, since they know about the competitive advantage and weaknesses of the firm (Neneh, 2013:29). Similarly, the cost of going public normally dissuades SMEs from registering their company on a stock exchange. This includes legal and administrative costs, road show fees, accounting fees, creation duty on share capital, issue duty marketable securities tax, bank charges, brokerage, as well as underwriter's fees and printing fees to be paid to professional advisors such as sponsors, corporate advisors, lawyers, accountants, transfer secretaries and public relations consultants. However, despite these obstacles Jargot (2006:16) is of the view that it is expected that all things being equal listing "will yield long-term rewards that will justify the short-term costs". Likewise, it is well documented in SME literature that firm listing may lead to a loss of ownership/managerial control. This occurs when shares of a company are sold publicly, which necessitates the formation of a board of directors and subsequent reconfiguration of the ownership and control structure of the company. It has been found that this poses a threat to both the founders of a quoted company and its current management structure, because as the firm grows in size the board may call

for a more experienced management to take over the control of the business, irrespective of the length of stay of the top management. Lastly, the short-term focus of investors who are bent on receiving share dividends during tough economic periods may cause ancillary disadvantages that has a negative long-term impact on the operation of quoted firms. Consequently, the problems of listing have overshadowed its potential benefits to SMEs, as indicated in the findings of various research articles.

Several scholars have pointed out that the share capital levels either positively or negatively influence firm expansion and the performance of listed firms. M'kombe (2000) identified that the number of shares issued had no impact on aftermarket performance, but the value of the capital raised (i.e. market capitalisation levels) did have an influence on the aftermarket performance of listed firms over a 5 year period. According to Mashaba (2014) there have been consistent and empirical evidence of positive abnormal initial returns, and there is also persistent evidence of long run under-performance in junior stock exchanges globally. Given that the requirements for listing on the AltX are less stringent, since there is no need for intending firms to declare or show evidence of prior profit history (unlike the three years' profit history required by the JSE main board), which is also without a need to declare a minimum pre-tax profit (unlike the R8 million pre-tax profit required by the JSE), the JSE's AltX listed firms are expected to derive more benefits from going public. According to Pagano, Panetta and Zingales (1996: 1998) listing provides a cheaper funding option other than loans from banks, which is absolutely vital for SMEs with large current investments, large future investments, high leverage and/or high growth opportunities. That said, share listing also furthers the creative destruction process, since it provides an exit mechanism (which is known as harvesting strategy) for the founding owners of companies, family holdings, private equity or venture capital providers to realise their investments at a market-related value, at the same time re-invigorating those firms with more ambitious shareholders.

Furthermore, listing elicit outside competition to a company's lenders, allows for a lower cost of credit via reduced interest rates, and raises the 'readiness level' of a larger supply of external financiers who are willing and able to loan funds to a firm due to increased disclosures to them. Similarly, going public enhances the levels of liquidity and leads to portfolio diversification either by a firm reinvesting in other assets or by divesting from the company to other unrelated firms (Mashaba, 2014; Harvey, 2016). Apart from the aforementioned factors that influence firm listing and performance, some SMEs are noted to be motivated by non-economic factors such as increased visibility and prestige. This is intrinsically linked to the huge corporate goodwill that would accrue to the company afterwards (Pagano, Panetta and Zingales, 1996: 1998).

Despite the various positive reasons for listing, Mlonzi et al. (2010) studies find that the JSE's AltX showed the weak-form of market efficiency. More so, share price as a proxy for shareholder value was found to be negatively significant and led to approximately 50% loss of value. Consistent with this finding Harvey (2016) research concludes that a minimum of four (4) years of poor returns was

observed on the AltX for listed firms. On the other spectrum of the JSE's AltX literature shows its positive impact on firm performance. Mashaba (2014) found that earnings and return on capital tend to decline post listing due to reduction in profitability, and the trade-in of share funds raised to pay down debt, rather than to finance the growth of listed firms. However, successful firms used their share funds efficiently, which led to a reduction in cost of bank credit that reduced on-going credit cost to these firms and subsequently led to improved profitability levels. This finding is also supported by the works of Heerden (2015) and Ungerer, Gerber and Volschenk (2015). Also, the AltX was found to have far more listings than de-listings when compared to the JSE (Heerden, 2015). While, the overall registered firm performance level was observed to be still centred on the individual performance of each listed company, the differential in performance levels was also found to be based on the industry experience/skillsets, top-notch educational qualification and the entrepreneurial experience of their directors (Ungerer, Gerber and Volschenk, 2015). Thus, given the abovementioned points and counter-points there is seeming inconclusive evidence to support the notion that increased share capital levels influence the level of expansion, as well as the performance of listed firms on the JSE's AltX due to conflicting results/findings from the relatively few studies in this area. Based on the above theoretical synthesis and arguments the following research question was formulated:

***Research question 3: How does increased share capital levels influence the expansion and performance of listed firms on the AltX?***

This question deals with the effects that increased share capitalisation levels have on the growth strategy cum expansion, as well as its impact on the performance of publicly quoted firms that are listed on the JSE's AltX. The answer to this question will explain if there exist a relationship between the increased share capital levels and the level of expansion and performance of the listed firms on the JSE's AltX, building on existing theoretical perspectives in the literature review section of this study. As stated earlier, the findings of reviewed literature studies suggest an empirical evidence of either a positive, neutral or negative association between them, which is inconsistent and questionable. Obviously, the answer to this question will inform findings relating to whether there actually exist a directly proportional or inverse relationship between these phenomena.

**4.8.1.4 ARGUMENT IV: THE IMPACT OF THE COMPLIANCE REQUIREMENT OF THE JSE'S ALT X ON THE B-BBEE SCORE PERFORMANCE OF LISTED FIRMS**

Arising from the negative impact of the now defunct white apartheid minority government of South Africa's racially inclined policies, black people comprising Africans, Coloureds and Indians were excluded from partaking in the mainstream of the national economy (Black Management Forum, 2012; B-BBEE Amendment Act, 2013). This apparent anomaly created a dichotomy in skill levels given the highly segregated societies, which led to a portion of the nation being poor, largely uneducated, jobless and apathetic. Consequently,

the ANC government after considering the huge potential of the black population and their geographical spread sought to address the myriad of socioeconomic problems which have resulted in a significant shortage of skill and high levels of poverty, as well as inequality in order to grow the potential of black people via their economic emancipation, in the overall interest of country (Mehta and Ward, 2017; DTI, 2018; Pike, Puchert and Chinyamurindi, 2018; Maweni, 2019). In tandem with the constitution of South Africa the B-BBEE programme was instituted to help deal with these inherited problems so that democratic values and dividends can be translated into fairness, social justice and equal rights (B-BBEE Codes of Good Practice, 2014). Thus, rights should encompass both political and economic rights, so that the quality of life of all citizens can be improved upon, in a quest to build a free, united, sovereign and democratic South Africa. By implication, the spirit of the B-BBEE statutes implies that apart from public institutions championing this part to a new/common destiny, businesses must play a fundamental role towards achieving these lofty objectives too.

Going further, the B-BBEE Amendment Act (2013) gave rise to the establishment of the B-BBEE Commission in order to deal with compliance issues that were identified and stipulated by the provisions of the Act. Likewise, the Act clearly defined what a B-BBEE initiative, B-BBEE verification professional, B-BBEE verification professional regulator etc. meant. According to BDO South Africa (2019) the B-BBEE compliance or business requirement for companies in the country is not a legislative requirement, because businesses are not required to either disclose their B-BBEE status credential or even verify their status, which means that B-BBEE is not compulsory, unless these firms are either JSE listed entities or are companies that participate in government tenders and procurement. Due to the amendment to the B-BBEE Act 53 of 2003, the principal Act inserted an enactment that provided that cancellation of contract or authorisation can take place without prejudice to any other remedies in a public procurement process on account of a fronting practice, false information or misrepresentations knowingly furnished by or on behalf of an enterprise in respect of its B-BBEE status. Thus, the enforcement of this Act means that South African businesses now have a moral obligation as well as a strategic business case to comply with this legislation. Also, any one that is guilty of an offence under this Act will be penalised for contravention of subsection (1) and subsection (2) and is liable to a fine not exceeding 10 per cent of its annual turnover or to imprisonment for a period not exceeding 10 years (12 months in the case of a contravention of subsection (2) or section 13N) or both.

Furthermore, Section 13G (2) of the B-BBEE Amendment Act 2013 requires a JSE listed entity (i.e. comprising both the Mainboard and the AltX listed companies) to undergo a B-BBEE verification process, which should be vetted by a SANAS accredited verification agency, report and disclose the contents of the outcome on the prescribed form to the B-BBEE Commission. Else, the JSE listed entity's conduct is in violation of the law. Consequently, AltX listed companies must submit a compliance report on an annual basis, while the directors of the lower bourse quoted companies have a fiduciary duty to ensure

that their business complies with the law. Similarly, the audit process of quoted companies must state categorically if irregularities and/or a material breach were uncovered during an audit of a JSE listed entity. Pursuant to the provisions of this Act, Kassen (2018) stresses that the JSE has also amended its listing requirements by placing a continuing obligation on quoted firms to publish their B-BBEE compliance reports on their websites, and thereafter, make an announcement on the SENS that this disclosure requirement has been carried out. As earlier stated, one of the main reasons for establishing the JSE's AltX is to assist young high-growth firms to identify B-BBEE partners and groups who might want to tap into new/existing investment opportunities or raise capital in a regulated financial market. In essence, registering on the lower bourse assists numerous SMEs as well as some large JSE's Main Board listed firms in their on-going transformation and restructuring in order to help them to meet their current B-BBEE transaction scorecard targets (EY, 2013). Interestingly, the DTI (2012) notes that B-BBEE compliance ensures that many private companies and government agencies are encouraged to patronise listed SMEs in their tendering process, application for licences, permits and public sector procurement, because apart from complying with the law, it gives them access to tax incentives and financial grants.

It is thus important to ask this probing question; what is the main motivation that drives the JSE to compel quoted firms to comply with the B-BBEE statutes? As a matter of fact, according to the Stock Market Clock (2019) the JSE is the 18<sup>th</sup> largest stock exchange in the world with a total market capitalisation of about US \$977,495.66 trillion (adjusted US dollars as of March 2019). This makes it the largest and most liquid bourse in Africa accounting for about 90 per cent of the total market cap on the continent (Ferreira and de Villiers, 2011). But it is worrying to know that blacks who constitute a vast majority of the population in South Africa own less than 2 per cent of the listed shares on the exchange (Ntingi and Hlatshwayo 2010). Given this scenario, there is a sensational business case for the JSE to use B-BBEE investments to bolster the black listed share ownership levels to between 5-10 per cent, in order to ensure the sustainability of the exchange over a long-term period, as well as key into the government's goal of deracialising the exercise of economic power. However, given the fact that most blacks are resource constrained to achieve this feat unaided, it becomes essential to ingeniously use the JSE's AltX to encourage this gradual transition without losing investable funds to foreign markets or even discouraging white entrepreneurship /FDI due to a racially based preferential treatment or policy. Similarly, it was due to the opprobrious remarks about the white minority led government in South Africa, that the ANC led government introduced the B-BBEE to correct the current systemic imbalance in the economy, in order to promote wealth redistribution across racial lines. It would be indeed fool-hardy to replace a bad minority led racial policy with a poorly conceived majority led discriminatory policy, because this may possibly trigger an economic downturn, of which most of its outcome can be unanticipated. Consequently, the interventionist regulatory stance of the JSE is absolutely desirable. Extant research reveals that factors such as listed firm ownership structure, board characteristics, customers, suppliers, and employment

structure, as well as incentive systems have profound long-term effects on company strategy, transaction costs, operations and performance.

Likewise, some researchers have pointed out that South Africa risks losing existing and future investments, if businesses are compelled to sell/give their shares to blacks/unenterprising and/or incompatible partners (Ward and Muller, 2010). Most pundits have also pointed out that while it is important to redistribute wealth in any forward-looking society, businesses should however be motivated by both economies (Jack and Harris 2007; Mzilikazi, 2015) and their socially responsible contribution to communities via corporate citizenship and host community engagement schemes (i.e. their B-BBEE scorecard performance). Consequently, the encouragement/promotion of black ownership should be carried out cautiously, so that billions of South African rand do not exit the country (which unintentionally results in the weakening of the value of the South African rand) or even led to a mass exodus/emigration of the predominantly skilled white population to foreign countries (Acemoglu, Gelb and Robinson, 2007). Furthermore, the building of a non-racial South Africa should simultaneously tap the skills/capacity of 'whites' and also harness the potentials of the black population, so that national growth/transformation can easily take place. Therefore, this necessitates the gradual implementation of all aspects of the B-BBEE generic scorecard, where all South Africans can channel their energies together (devoid of racial hatred) to build the country (DTI, 2018). Available empirical findings indicate that successful business persons are serial entrepreneurs with portfolios of corporate failures and success (Deakins and Freel, 2012), which starts from small firms to large conglomerates (Herrington, Kew and Mwanga, 2017; Bosma and Kelley, 2019). Given that inexperience and the fear of failure can jeopardise the chances of success of B-BBEE transactions, this study envisage that SMEs can graduate remarkably over a short-term period from being labelled as small firms to large MNCs by the virtue of listing. But, it is quite clear that the scale of each firm could vary based on industry and firm core competences, consequently, measuring the performance of B-BBEE compliant firms will assist in ascertaining the impact that government corporate social responsibility and citizenship policies have on firm profitability and sustainability in South Africa.

The aforementioned discussion reveals that the JSE's compliance standards with respect to the B-BBEE Act is purposefully strict, so that quoted firms can brace up to the challenges of economic empowerment, advancement and national transformation. Nevertheless, the actual measurement, analysis and evaluation of the performance of listed companies as a result of B-BBEE is a very contentious issue (Fin24, 2015b). This has resulted in inconsistent conclusions been arrived at by various researchers – due to low levels of reporting and the availability of limited data nationwide (Ensor, 2018). According to Fin24 (2015b) a methodical scrutiny of an Intellidex study revealed that the total B-BBEE deals recorded by the JSE's top 100 companies have generated about R317 billion net asset value for beneficiaries after the settlement of transaction debt and other pending financial obligations. However, only 34 per cent of this sum has matured with unencumbered access (i.e. without trading restrictions) for beneficiaries, while 66 per cent are live

transactions that would mature in the coming years. Similarly, an appraisal of the B-BBEE commission report by Leadership (2018) online magazine indicates that there were only 38 per cent representation by black people on the boards of the JSE's listed entities. Besides, this figure consists of approximately 20 per cent black male board members, while female representation on the board stood at 18 per cent. Furthermore, the report showed a decrease in black ownership by 5.75 per cent and black female ownership by 1.96 per cent in comparison to 2016 statistical base year.

Apart from the issue of limited data, another major problem that confront most researchers is how to measure the impact of B-BBEE on business performance. Many scholarly publications have tried to link empirical evidence to support the relationship between the B-BBEE compliance and the financial performance of the JSE listed firms using metrics such as annual share price, revenue, profitability, price-to-book value ratio and price-to-earnings ratio. Mathura (2009) finds that increased B-BBEE scores can lead to higher profitability, but it was established in the same study that low B-BBEE scores did not impact negatively on the profitability of listed firms. Mehta and Ward (2017) study supported these results, however, in the longer term, their findings revealed that highly rated quoted B-BBEE firms generated lower returns than those with lower scores. This inconsistency was probably associated with the effects of high cost of B-BBEE compliance. Likewise, Akinsomi et al. (2016) studied the performance of the B-BBEE compliant listed property firms in South Africa, expectedly, their findings indicate that the B-BBEE rated firms have lower risks and superior higher returns than the non-B-BBEE rated firms. On the contrary, Kruger (2014) conducted an empirical survey to measure the impact of B-BBEE on ten selected dimensions of business performance, surprisingly, this was found to be counter-productive by a sample of 500 individual managers. Although B-BBEE is supposed to be the fundamental core guide that will lead to South Africa's economic transformation and emancipation Pike, Puchert, and Chinyamurindi (2018) notes that B-BBEE was promoting tender corruption and putting an economic strain on SMEs. Hence, there is now an emotive call by industry practitioners and researchers, as well as a big push for the BBEE model to be properly restructured, since it may be causing many businesses to close shop due to its huge cost implications. That said, the negative impact of B-BBEE might also be triggering local firms to seek alternative markets abroad, as well as inadvertently aiding capital flight overseas.

Mokgobinyane (2017) observes that being black-empowered does not really translate to better revenue, profitability and a larger market share for B-BBEE compliant JSE listed companies. Correspondingly, Mzilikazi (2015) findings show that B-BBEE compliant companies achieve a positive abnormal cash flow return of 2.31 per cent over a 10-year period, however, actual performance levels vary by industry. It was also observed that the generic elements of the B-BBEE score had different impact on listed firm's market performance. Interestingly, Van der Merwe and Ferreira (2014) found that a significant positive relationship exists between the management control element of the B-BBEE score and the share returns of quoted firms on the JSE, while a

significant negative association exists between the ownership and preferential procurement elements of listed firms and their share returns. Consequently, the inconsistencies in findings can lead to various results that point towards the positive and/or negative influences of the components of the B-BBEE scorecard on listed firm's investment levels, profitability and productivity, as well as on growth levels in South Africa. In fact, aggregate effects can be prone to distortions because of the economic impact of the costs and benefits of each of the generic scorecard elements, which might actually cancel each other out. To this end, it is important to investigate how the compliance requirement of the JSE's AltX impact on the B-BBEE score performance of listed firms. Expectedly, the revised listing requirements of the JSE's AltX places a continuing obligation on quoted firms to publish their B-BBEE compliance reports on an annual basis, and obviously assist in improving the B-BBEE score performance of these firms. Given that many scholars have focused their research on the JSE's Main Board, studies that centres on the SMEs that are listed on the lower bourse would assist in shedding more light in this area of research. The above-mentioned arguments motivated the researcher to ask the following research question:

***Research question 4: How does the compliance requirement of the AltX impact on the B-BBEE score performance of listed firms?***

The answer to this question will explain if there exist a relationship between the compliance requirement of the JSE and the B-BBEE score performance of listed firms on the lower bourse in South Africa, building on existing theoretical perspectives in the literature review section of this study. By utilising the consolidated B-BBEE scorecards elements such as ownership, management control, employment equity, skills development, preferential procurement, enterprise development and socioeconomic development, this study expects to identify if the regulatory requirement for the inclusion of black people – in particular women, workers, youth, people with disabilities and rural dwellers, would impact on the performance of listed firms. Moreover, in line with global realities integrating economic, environmental and social sustainability strategies, as emphasised by the B-BBEE framework is crucial in achieving and securing the long-term viability of listed firms. This is part of what the researcher intends to find out here. Reviewed literature studies suggest either a positive, neutral or negative association between the two phenomena. Consequently, the answer to this question will inform findings relating to whether there exist a relationship (i.e. correlation) and causation (i.e. cause and effect) between these phenomena.

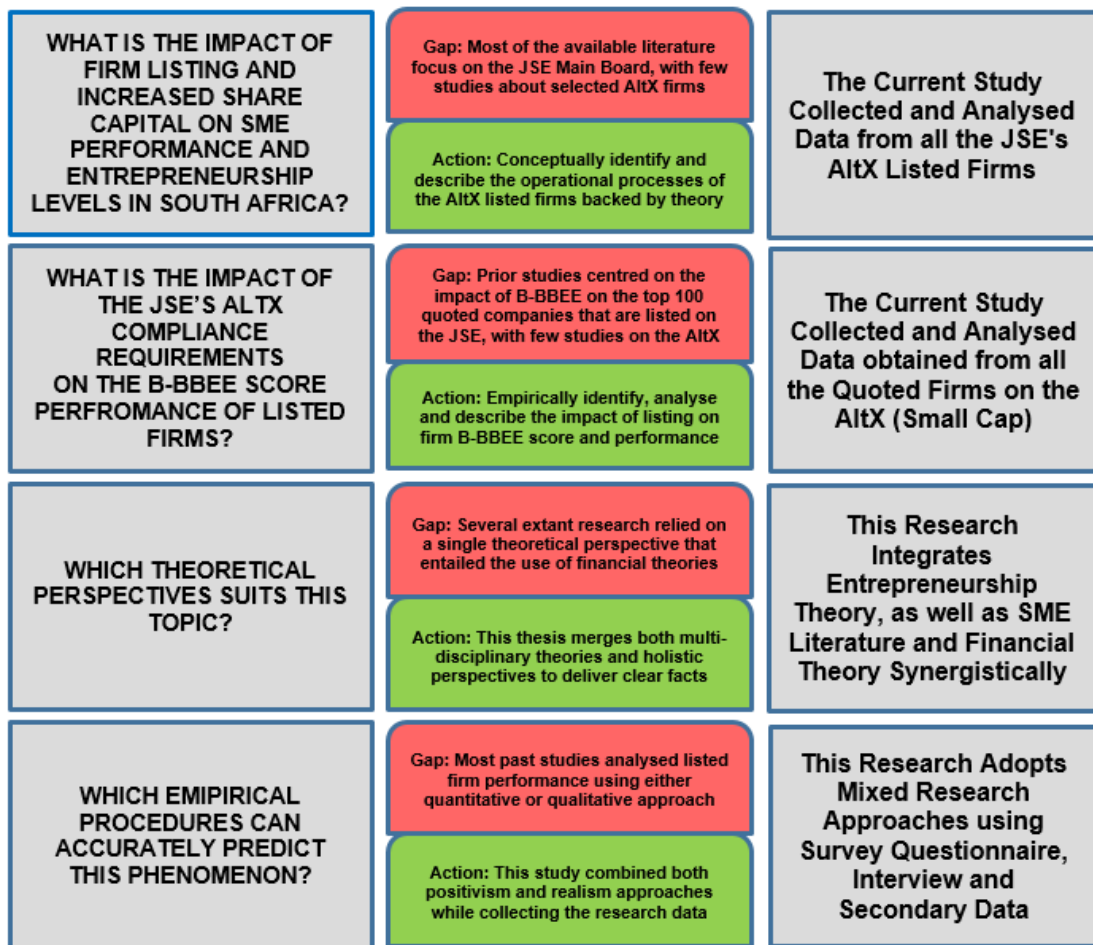
In order to formulate and develop the hypotheses for this study, the main research arguments and questions were discussed in the preceding section. Evidence provided by the aforementioned arguments, suggests that there exist some fundamental gaps and inconsistencies which are copiously ingrained in findings within this research area. Building on the extant literature on entrepreneurship, capital market listing, as well as the JSE corporate governance requirements which complies with existing legislations in South Africa especially the B-BBEE Act, this current study sets out to advance



knowledge about the benefits and drawbacks of raising capital on the JSE's AltX. This is because when a firm raises capital via listing, it generates funds which can be used to finance the expansion and eventual transformation of these SMEs into high growth firms within a relatively short-term period of time. However, rapid firm growth can become problematic for SMEs that enjoy the advantage of being small and nimble due to the complexities associated with managing large/quoted companies. Moreover, a vast majority of the extant literature as well as empirical findings have led to the development of controversial theories that are relatively inconsistent, as such cannot adequately substantiate the assumption that the JSE's AltX listed firms derive benefits that impact on their performance unlike their un-listed peers in South Africa. Consequently, the existing lacuna in the literature created voids in this research area considering the fact that many listed firms have been delisted due to various reasons – notwithstanding the fact that a slightly higher percentage of registered firms on the AltX have graduated to the Main Board.

Furthermore, this study used the theoretical syntheses of the various entrepreneurship schools of thought such as the economic (theorists) approach, the psychological characteristics school/entrepreneurial personality approach, as well as the socio-behavioural approach to explain why it is important for SMEs to list on the AltX when considering the difficult entrepreneurial ecosystem in South Africa. This is not without precedence, since it follows the widely referenced GEM study methodology. Borrowing from finance literature, this research was also able to provide a concrete theoretical evidence supporting capital market listing, which is not covered in numerous studies. Based on these theoretical perspectives the various merits and demerits of listing on the JSE's AltX were identified as important factors in understudying the motivating factors that makes an SME to want to list on the lower bourse in South Africa. Although, these pull and push factors were important drivers that encouraged SMEs to list on the JSE's AltX, it was observed that apart from the economic rationale warranting firm listing being crucial, socio-political and legal issues made them to do so, in order to promote current and future firm growth, as well as ensure their long-term sustainability – considering the turbulent macroeconomic conditions in South Africa.

But, as earlier stated the gaps in previous studies/methodology led to various researchers arriving at conflicting and inconsistent findings due to their use of either quantitative or qualitative data. Hence, this study had to creatively use the pragmatism research paradigm to develop different guiding hypotheses which were derived from this study's research questions, in order to fully understand and operationalise the impact of SME listing on their performance. This therefore puts this study along the same knowledge stream with contemporary literature and past empirical research. To further demarcate a line of departure for the current study, Figure 4.6 presents and links the identified literature gaps to the research questions and hypotheses of this thesis, so that this research can build on the findings of extant literature, and also contribute to new knowledge in this field of study.



**Figure 4.6: Integration of Literature Gaps with Research Questions and Hypotheses (Source: Authors' compilation)**

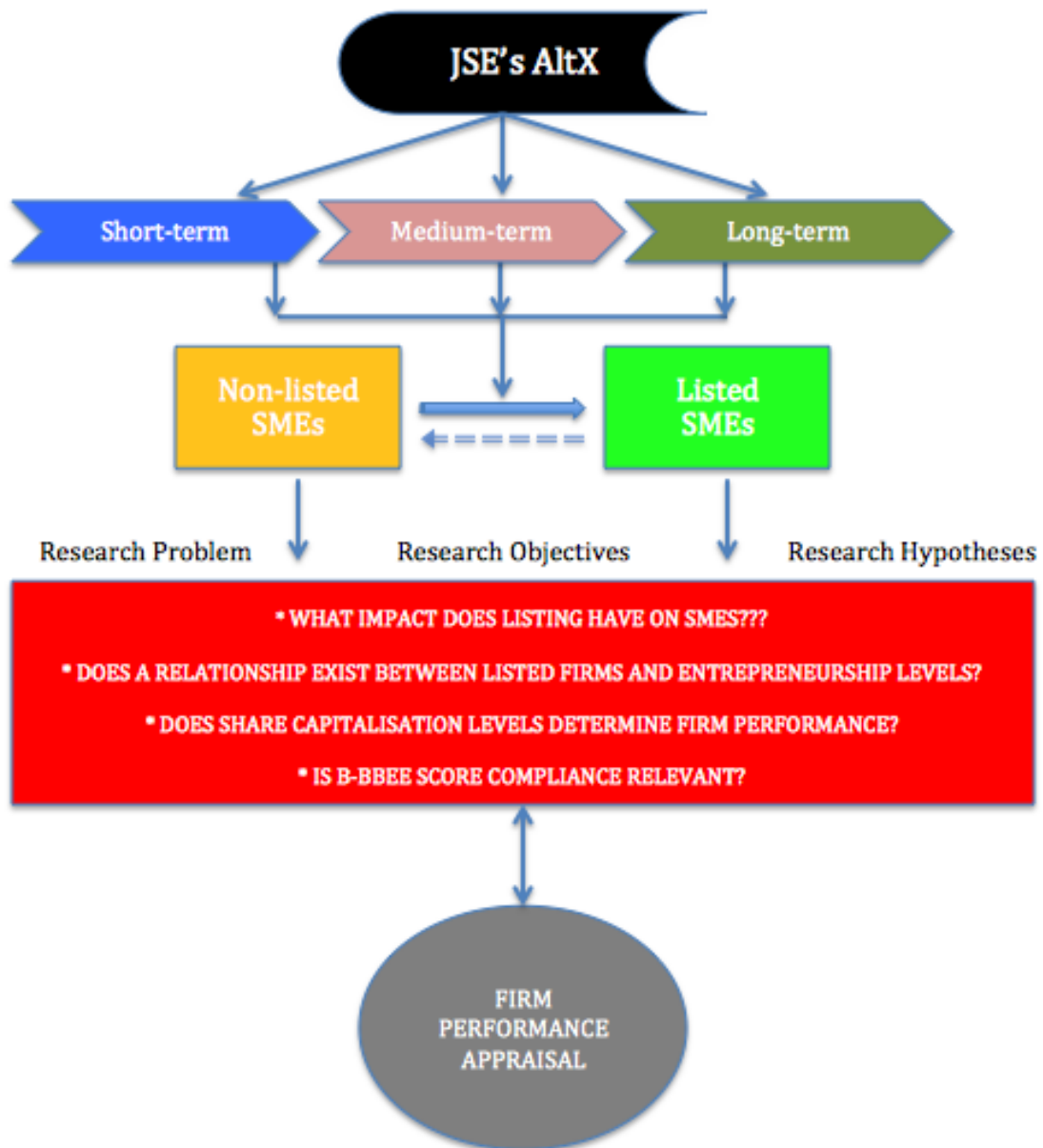
Disaggregating the impact that firm listing has on SME development is a difficult task, considering that various stakeholders/researchers measure their performance in several ways. In fact, numerous extant researches have relied on a single theoretical perspective that entailed the use of only financial theories to explain how listing impacts on firm share performance. But from available literature review it is quite clear that SME performance comprises of both economic and non-economic components, which is obviously the reason why there are inconsistent and conflicting findings/conclusions in this research area. Besides, some previous literature study used only qualitative data to analyse the JSE's AltX impact on listed firm performance. A major drawback associated with this methodology was that respondents' data reasonably indicated either excessive optimism or timid pessimism which are most times at variance with available empirical data that are used to measure the actual financial performance of these quoted companies. Consequently, this thesis employs an integrated approach that uses pragmatism research paradigm (i.e. mixed research methodology) in order to provide reliable solutions to both the research problem and question. The following section presents the conceptual/theoretical model of the study. It shows how the variables of interest

are interconnected, and emphatically indicate how this study's hypotheses can be adequately operationalised.

#### **4.8.2 THEORETICAL MODEL OF THE STUDY**

Past studies on the JSE's AltX employed numerous conceptual frameworks, theoretical models and empirical methodologies, hence it is not surprising that their findings led to diverse conclusions. One striking difference in most of these studies is the use of either deductive or inductive approach when reviewing the relevant literature, as well as gathering the critical data for their research (Imenda, 2014). Ultimately, every study's approach contributed to each of the authors' view-point and/or point of reference, which led to the observed inconsistencies in the findings of these previous studies. Specifically, financial theories, management theory, organisational theory and agency theory were the central core that served as a systematic point of view for specifying the ensuing relationships that existed between the variables of interest which were used to predict and explain the impact of SME's AltX listing on firm's performance. Consequently, the theoretical model for this study was designed in such a way that it builds on the advantages of both approaches, thereby compensating for the design flaws that led to conflicting findings in earlier studies (Senik, 2010; Lakew 2015). Since this study anticipates that the theoretical model is not just an isolated isomorphic diagram, it is expected to show the interconnection between the variables of interest by coherently integrating a research design that is pragmatically compatible with the phenomenon under study, instead of concentrating on issues of logical consistency with similar studies.

Furthermore, given that the epistemological paradigm that is used to dissect a research problem helps to guide the entire research from proposal to conclusion, this study's theoretical model consolidates the goals of this research together with its research questions and methodological requirements/ethical standards so as to reach a valid conclusion. Despite the fact that this study's approach is novel and contributes to new knowledge in this stream of research, the adopted theoretical model of this research is not without precedence (Senik, 2010; Imenda, 2014; Lakew 2015). It applies the relevant literature from existing theory and prior research, the author's preliminary findings from own investigations, regulatory standards, the JSE requirements and law, as well as the researchers' study goals, problems, past experience, listed firm's expectations, funding and funder goals, in addition to ethical standards given the research setting in South Africa. Because this research is a mixed study, it therefore means that a powerful synthesis of both theory and practice is inevitable, in order to provide the most informative, thorough, and balanced research outcome at the end of this study (Creswell, 2014). As earlier stated, research studies concerning the impact of the AltX on listed SMEs and entrepreneurship have utilised various methodologies to arrive at their conclusion. After reviewing the available literature for this study, and taking cognisance of the research problem, objectives and hypotheses, the theoretical model of this study was developed and is illustrated below.



**Figure 4.7: Theoretical Model of Study (Source: Authors' compilation)**

From Figure 4.7 above, it is clear that the theoretical model of this study attempts to study the impact of the JSE's AltX on listed firm performance and entrepreneurship. Besides, over a short-term, medium-term and long-term period, this model shows how listed SMEs performance would be affected either positively or negatively (via empirical testing), so that the research problems, objectives and hypotheses can be appropriately interrogated. This consequently results in individual and aggregate firm performance appraisals. Furthermore, this study's theoretical model elucidates a rational, specific and targeted approach for the AltX listed companies, as well as for intending SMEs that might want to join the lower bourse. Hence, it is predicted that the improved

competencies of the AltX listed firms would strengthen them and lead to the optimisation of their performance.

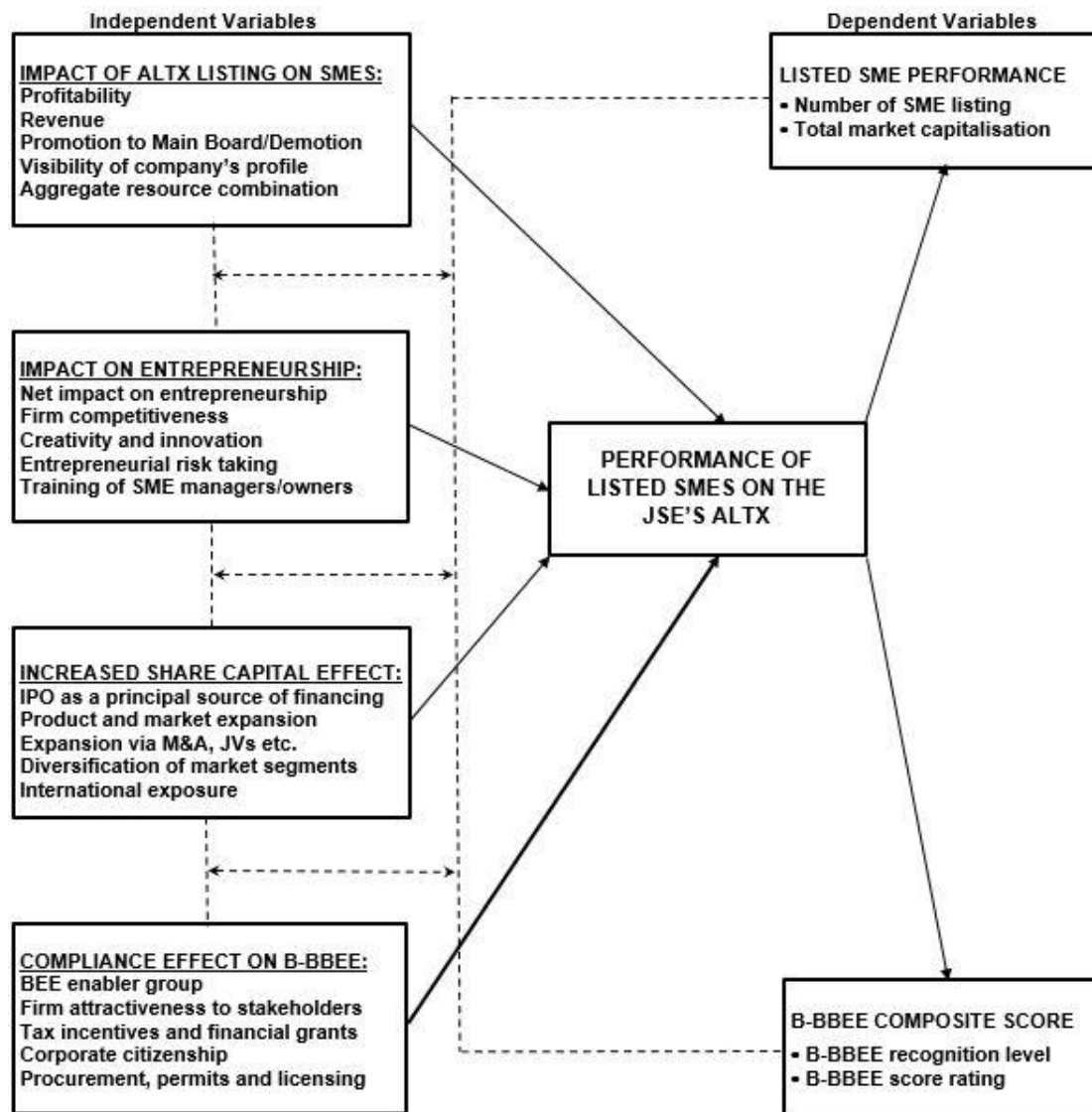
#### **4.8.3 OPERATIONALISED CONCEPTUAL FRAMEWORK OF THE STUDY**

Historically, it is worthy to note that multiple operationalism (involving the triangulation of facts/data) gained prominence in scholarly research due to the obvious disadvantages that are associated with both quantitative and qualitative research techniques/methods. This stance is supported by Johnson, Onwuegbuzie and Turner (2007: 117) where they specifically mentioned that the current antagonism between paradigms is unproductive. In order for this study to achieve its objectives, the researcher chose to concentrate on both the intellectual and practical synthesis that is synonymous with the pragmatism epistemological paradigm. Therefore, the relevant theoretical foundations earlier mentioned in the literature review section of this study had to be tied with practice, so that new knowledge can be generated in an area where the praxis of research is being identified for the benefit of all (i.e. whether you are an industry practitioner, researcher or policy maker). Whereas, deduction (i.e. movement from the general theory to the specific problem) is associated with theories identified in theoretical frameworks, induction warrants the use of a conceptual model/framework that synthesises relevant concepts from various sources when interrogating the research problem (Imenda, 2014).

Although wider applicability of the findings of a research determines the impact factor of a study, operationalising and limiting the research problem to an area that is related to the research hypotheses will ensure the robustness of the data that is being gathered by this study, as well as address both validity and reliability concerns. The operationalised conceptual framework of this study is therefore presented in this section, taking cognisance of the research hypotheses that is to be interrogated later on. Furthermore, this study's conceptual framework evaluates how the groups of variables below the under listed themes impact on the SMEs that are listed on the JSE's AltX, especially with respect to these firm's performance and entrepreneurship levels in South Africa:

1. Impact of AltX listing on SMEs;
2. Impact on Entrepreneurship;
3. Increased share capital effect;
4. Compliance effect on B-BBEE.

Drawing on the literature reviewed in the preceding chapters of this thesis, an illustration of the proposed operationalised conceptual framework/model for this study is indicated in Figure 4.8 below.



**Figure 4.8: Conceptual Framework of the Study (Source: Authors' compilation)**

Keeping in mind that the best fit model for conceptual frameworks are those that foster innovation with intellectual rigour, thus supporting relevant research that integrates various approaches, streams of knowledge, and/or pioneering theories that have not been previously connected, the operationalised framework above provides an all-encompassing foundation to interrogate the phenomenon that is being understudied. Furthermore, this diagram provides a rationale for the results expected to flow from how the JSE's AltX listed firm performance is ultimately influenced by different variables associated with the four thematic areas that is being captured by the researcher. Under the theme the impact of AltX listing on SMEs variables that are associated with firm profitability status, revenue, listed firm promotion to the Main Board or demotion, the visibility of the JSE's AltX listed company's corporate profile, as well as the aggregated resource combination variables will be empirically

tested. Also, the second thematic area focusing on the impact of firm listing on entrepreneurship levels in South Africa will be empirically tested via the capturing of variables such as the net impact of listing on entrepreneurship, firm competitiveness, creativity and innovation, entrepreneurial risk taking, as well as the impact of the training provided by AltX on SME managers/owners performance. Thirdly, the thematic area focusing on the increased share capital effect on listed SMEs will be investigated using metrics such as the IPO as a principal source of financing, product and market expansion, expansion via M&As, JVs etc., diversification of market segments, as well as the international exposure of listed firms on the JSE's AltX. Lastly, in line with the current legal realities in South Africa the fourth thematic area focusing on the compliance effect on B-BBEE would be measured using variables such as BEE enabler group impact, firm attractiveness to stakeholders, tax incentives and financial grants, corporate citizenship, as well as procurement, permits and licensing.

A review of SME, small business development and entrepreneurial financing literature suggests that listed firm performance can be influenced by both internal and external factors. In this study two main dependent variables were identified to be significant measures/indicators of how well these firms are performing. First of all, in order to ascertain the performance of SMEs that are listed on the JSE's AltX, it is critically important to quantify the number of SMEs that are listed on the lower bourse, as well as measure the total market capitalisation of the quoted companies over time (i.e. from 2003-2016, which is the period that this study covers). Likewise, since these firms do not operate in isolation, the researcher was able to use the proxy that is linked with the B-BBEE score rating/recognition level to measure their performance in line with the JSE's long term strategic vision, as well as in fulfilment of the current enabling legislative provisions in South Africa. It is envisaged by the researcher that both of these internal and external motivating and hindering factors can likely influence the performance of listed firms on the JSE's AltX. Consequently, the relational connections of these variables with listed firms' performance are examined collectively and simultaneously (using a multivariate statistical measurement format), rather than on a bivariate basis.

Having adequately perused the literature review section of this study, the above conceptual model is designed for (and relevant when) seeking in-depth knowledge about how listing on the JSE's AltX impacts on SME performance and the level of entrepreneurship in South Africa. Besides, it is also a guide that assists researchers, industry practitioners, policy makers, as well as SME owners/managers, in improving their level of understanding, when investigating what drives and hinders SME activities/growth in South Africa. In summary, the operationalised conceptual framework of this study is a continuation of the theoretical framework for this research as illustrated in Figure 4.7. More so, the

theoretical model informing this current study conceptualises the theoretical positioning of the current study in relation to previous research, by moving from deductive theorisation to generalise about listed firm's performance appraisal. However, in order to expand and deepen the current stream of knowledge in this area, as well as fill the gaps that have been laid bare by the inconsistencies in the findings of prior studies, the conceptual model shown in Figure 4.8 was designed to show the relationships among constructs of interest in this study that have been ignored by earlier studies. Consequently, based on the pragmatic position of this study, the two frameworks guide how the data gathering tools that were used in this study are developed, as well as, how the empirical data were gathered, analysed and interpreted. In the end it helped the researcher to compare/link the empirical findings against the theoretical background of this study.

#### **4.8.4 THEORETICAL SYNTHESIS AND HYPOTHESES FORMULATION**

Having adequately dissected and justified the basis for adopting both the theoretical model and the operationalised conceptual framework for this study, this section synthesises theory in a manner that ensures that the hypotheses which is being developed can be empirically tested in the next chapter. As indicated earlier, the hypotheses were formulated from existing scholarly literatures and past empirical works in the field of entrepreneurship, small business development and entrepreneurial finance. Consistent with the findings of similar studies, which observed a dichotomy between financial performance and organisational performance, four (4) hypotheses were formulated in order to investigate whether listing impacts on SMEs' operation in South Africa, and the general level of entrepreneurship in the country. The aim of the researcher was to find out if registration on the lower bourse improves the financial viability of quoted firms, as well as their compliance to statutory legal requirements which are mostly time and resource sapping despite making them good corporate citizens. Since past studies arrived at conflicting conclusions, in order to correct this problem, the researcher had to ensure that the current study utilised a well-crafted hypothesis so that the current gap in literature can be adequately filled. Consequently, substantial attention was directed towards the various explanatory variables which influence the two dependent variables in this study, as a precursor to a more elaborate operationalisation of these variables in the succeeding research methodology chapter thereafter.

##### **4.8.4.1 HYPOTHESIS CONCERNED WITH THE IMPACT OF ALTX LISTING ON SMES**

Globally, the lack of access to funding opportunities is acknowledged as the main constraint that hinders the establishment of SMEs. Likewise, it also influences the long-run sustenance, survivability, as well as the growth of



SMEs. In South Africa the case is indifferent given the rating of the country's entrepreneurial financing ecosystem in the recent GEM South Africa report as insufficient (Herrington and Kew, 2018). Furthermore, starting or managing an SME on a lean budget leads to low profit margins, confinement in narrow market segments, and also results in the unattractiveness of the business to skilled manpower, as well as causes a substantial diseconomies of scale for many firms due to the undercapitalisation of such businesses. Obviously, the low rate of early-stage entrepreneurship and the high rate of business discontinuation in South Africa can be traced to the aforementioned issues (Global Entrepreneurship Monitor, 2018). This is why the Monevator (2009) rightly posits that a wide range of businesses including early stage, venture capital backed, as well as more established companies in the country either intend to or are listed on the JSE's AltX. Consequently, it is assumed that registering on the lower bourse provides access to growth capital (JSE, 2020).

Despite the fact that the AltX have assisted registered small businesses to a raise about R48.5 billion (i.e. based on 2016 figures, which is the baseline of this study), many researchers have come up with both positive and negative findings about the impact of the AltX on SMEs (Cheyne, 2016). According to the PWC (2019) there were 10 IPOs on the AltX between 2014-2018 culminating to a total of US \$156 million capital being raised on the lower bourse. While there were 20 further offers (Fos) totalling US \$1 billion within the same period. However, the weakening of South Africa's economic indicators due to political risk and aggravated policy uncertainty further weakened the fundamentals of the lower bourse resulting in lower levels of investor confidence, market capitalisation and firm listing over time. Researchers such as Mlonzi et al. (2010) and Harvey (2016) find that the AltX also exhibited the weak-form of market efficiency. This is because share price as a proxy for shareholder value was negatively significant and led to approximately 50 per cent loss of value – which on average caused a minimum of four (4) years of poor returns to be observed on the AltX. Consequently, when considering the board for listing, the AltX proved to have the most company failures as well as the worst long-term performance. However, on the contrary, Mashaba (2014) is of the view that there is an existence of an average of 3 years positive abnormal initial returns on the JSE's AltX. Arising from concerns the inconsistencies in the findings of previous studies, this study will therefore use the level of firm profitability, revenue, promotion/demotion to the Main Board, the visibility of listed company's profile, as well as the aggregate level of resource combination to ascertain the impact that listing has on SMEs. Based on these arguments and the investigative research question 1 of this thesis, the following hypothesis is proposed:

**Ho<sub>1</sub>:** *Firms that are listed on the JSE's AltX are less likely to perform better than unlisted SMEs.*

#### **4.8.4.2 HYPOTHESIS CONCERNED WITH THE IMPACT OF SME LISTING ON ENTREPRENEURSHIP LEVELS IN SOUTH AFRICA**

Without doubt, an increased volume and value of the traded shares on the JSE's AltX is a direct positive indication of economic growth in South Africa. And vice versa, it implies that the market is either shrinking or entrepreneurial opportunities are dwindling in a low growth scenario (Global Entrepreneurship Monitor, 2018). Extant research provides a solid empirical basis to assume that greater stock market activities lead to higher intensities in productivity, capital accumulation, economic growth and development (PWC, 2019). This is manifested in increased TEA rates, established business ownership and entrepreneurial employee activity rates in the country. Unfortunately, this is not so, because the nations' economic indicators are moving towards the opposite direction (Cheyne, 2016). As a matter of fact, the recent GEM South Africa report (Herrington and Kew, 2018) reveals that apart from the TEA rate which has increased by 59 per cent (i.e. 11 per cent) in 2017, unemployment rose to its peak at 27.6 per cent (40 per cent on an expanded scale, with youth unemployment exceeding 65 per cent), while the established business rate stood at 2.2 per cent. Likewise, international rating agencies Standard and Poors, as well as Fitch downgraded South Africa's economy to junk status. Similarly, the JSE's AltX that had 60 companies listed in 2016 with a total market capitalisation of R32.6 billion, has shed its weight with 49 companies currently listed on the lower bourse having an aggregate market capitalisation of R14.57 billion – which less than half of its former value (African Markets, 2018).

Given that SMEs in South Africa's total contribution to the GDP of the country is about 36 per cent of the aggregate value, the small business sector cannot be taken for granted due to its relative importance (Herrington, Kew and Mwanga, 2017). Efforts to encourage the development this sector should also galvanise the interest of all the stakeholders, especially the suggestions of policy makers, who in partnership with researchers have come up with viable solutions to the issues militating against the growth of small businesses in South Africa. Although, much is known about the problem of access to finance, less information is available as to how SME listing impacts on the level of entrepreneurship in South Africa. Contemporary studies in entrepreneurial finance literatures have highlighted the fact that SME listing provides small businesses with capital to drive and expand the operations of these firms, their findings and conclusions have not been exhaustive (Global Entrepreneurship Monitor, 2018). In South Africa, few studies have focused in this area, consequently creating a vacuum to be filled by new research. Given the lacuna

in this area, this study seeks to find out if listing really impacts on entrepreneurship levels in South Africa, by empirically testing its net impact on entrepreneurship, firm competitiveness, creativity and innovation, entrepreneurial risk taking, training of SME managers/owners etc. in order to contribute new knowledge in this area of study. In line with the investigative research question 2 of this thesis, the following hypothesis was formulated:

*Ho<sub>2</sub>: The unprecedented performance of the listed firms on the JSE's AltX is negatively associated with the level of entrepreneurship in South Africa.*

#### **4.8.4.3 HYPOTHESIS CONCERNED WITH THE EFFECT OF INCREASED SHARE CAPITAL ON LISTED FIRMS**

Globally, SMEs face an acute shortage of entrepreneurial financing due to large firms crowding out small businesses for available funds (Global Entrepreneurship Monitor, 2018). One potential issue that constraints SMEs from accessing capital financing is their inability to provide collateral for loans, as well as a fundamental lack of account transaction history to back up facts with figures with respect to their claim of either going to establish or running a viable business. Given that the accessibility and efficient functioning of the stock markets guarantees the ease of entrepreneurs securing cheap funds for their projects, the JSE's AltX is an integrated and indispensable part of the entrepreneurial ecosystem in South Africa that aid the translation of ideas to profitable businesses. Apart from raising funds, the AltX listing documentation requirement provides registered firms with a window of opportunity to develop a thorough business plan, using market research and information that are required by investors/bankers when they want to ascertain the cost of funding most SMEs' projects, especially those pertaining to working capital management and firm expansion. Although, most entrepreneurs rely on personal savings, family, informal investments sources (e.g. crowdfunding), business angels, venture capitalists, banks, government loans, as well as grants and subsidies, these are exhaustible means of funding a business (Pagano, Panetta and Zingales, 1998). Contemporary entrepreneurial finance literature reveals that using some of these financing options may pose serious challenges for small businesses, which includes the problem of a huge debt/cost burden on SMEs, as well as the threat of loss of business ownership over time.

According to Herrington and Kew (2018) 27 per cent of businesses in South Africa had to exit due the problem of lack of access to finance which is almost twice the average figure for other African countries. Most industry practitioners and policy makers are of the view that listing on the lower bourse impacts on the performance of SMEs. Therefore, there seem to be a logical flow of available information concerning the effect of increased share capital on many

listed AltX company's operations. Despite this widely held notion about the JSE's AltX playing a fundamental role on how industry watchers view this exchange, available statistics indicates a rather grim picture of the magnitude of the anticipated impact of increased share capital on listed firms. Available data from the JSE (2020) shows that 34 transfers to the JSE main board occurred during the period 2003-2016 out of 128 new listings on the AltX. As such, most SMEs attribute their company's growth to the catalytic effect of the JSE's AltX on small businesses. However, 37 delistings were carried out during this period, representing about 28.9 per cent of total listings, when compared to the 26.6 per cent figure for promotion to the Main Board during the same period.

As Burger (2016) finds in a discrete study this figure is far below the SME failure rate of 75 per cent in South Africa. Brougham-Cook (2016) points out that delistings do not necessarily imply failure, because between 70-80 per cent of SMEs delisted after positive development and growth of their business (e.g. due to an opportunity to sell, and/or as a result of the pursuit of another business opportunity by the founders/investors of a company). This is because, most times, these companies form part of a buy-out and consolidation into a larger, growing company (Cheyne, 2016). While, the remaining 15 per cent were as a result of non-compliance with listing requirements or liquidation. Given the fact that company bankruptcy, liquidation and exits are mainly caused by working capital issues, as well problems with accessing funding, which leads to low levels of profitability or even business loss, increased share capital levels should impact positively on listed firms' operations, *ceteris paribus*. Although, this argument is logical, it has not been tested empirically in any available literature study. Consequently, the researcher decided to determine the impact of increased share capital levels on listed firms' operations using econometric proxies that measures variables which can be used to estimate the potential effect of higher share capital levels on SME performance, given that empirical findings on the impact of firm listing on SME performance have yielded inconsistent results. Areas of concern included the use of IPO as a principal source of financing for SMEs, the use of increased share capital to further product and market expansion (this can involve the use of a larger asset base to reduce costs and increase company profits), expansion via M&A, JVs etc., diversification of market segments, as well as to gain international exposure. In line with the investigative research question 3 of this thesis, the resulting hypothesis was formulated:

**Ho<sub>3</sub>:** *The rising share capitalisation of the listed firms on the AltX decreases the likelihood of these companies' expansion.*

#### **4.8.4.4 HYPOTHESIS CONCERNED WITH THE EFFECT OF B-BBEE COMPLIANCE ON LISTED FIRMS**

The repercussions of South Africa's apartheid past continues to reverberate across the financial ecosystem in the country (Black Management Forum, 2012). Racially inclined policies that were implemented by the white minority government led to segregation in schools and at the workplace. Worse still, after the abrogation of these policies there still exist in almost all facets of the national economy the remnants/consequences of this dark history. It is often common to see huge skills gaps, income inequalities and under-development in black communities, while in affluent white neighbourhoods, the opposite is the case. Hence, the ANC government is taking the bull by the horn by trying to address this socioeconomic problem via the economic emancipation of black people, so as to build a free, united, sovereign and democratic South Africa, where fairness, social justice and equal rights prevails (B-BBEE Codes of Good Practice, 2014; Mehta and Ward, 2017; DTI, 2018; Pike, Puchert and Chinyamurindi, 2018; Maweni, 2019). In line with the existing B-BBEE legislation (B-BBEE Amendment Act, 2013), the JSE has adapted new compliance requirements/guidelines for all companies that either intend to or are currently listed on the exchange, in the interest of the long-run sustainability/profitability of the bourse. However, recent studies have arrived at conflicting conclusions/findings, since the impact of the JSE's AltX B-BBEE compliance requirements does not always translate to higher scores for listed firms. Moreover, higher B-BBEE scores may not trigger above average returns for these firms.

Given that corporate citizenship, as well as CSR have been linked to inclusive growth, competitiveness, higher levels of profitability, firm expansion and internationalisation, and rapid economic transformation (Han, Jennings, Liu and Jennings, 2019), the researcher assumes that higher B-BBEE scores would definitely led to better performance. However, the availability of limited data in this area of study is raising concerns about the validity and the reliability of the research carried out on this topic so far. Most recent studies use the Intellidex database of the JSE's top 100 companies' B-BBEE deals (Fin24, 2015b). Thus, the findings of various studies have resulted in inconsistent conclusions (Kruger, 2014; Van der Merwe and Ferreira, 2014; Mzilikazi, 2015; Akinsomi et al., 2016; Mehta and Ward, 2017; Mokgobinyane, 2017; Pike, Puchert, and Chinyamurindi, 2018). For instance, Mathura (2009) finds that higher B-BBEE scores leads to greater levels of profitability, however, he observed that lower B-BBEE scores do not impact negatively on the levels of profitability of the JSE's AltX listed firms. Similarly, Akinsomi et al. (2016) finds that highly rated B-BBEE firms in the property sector encountered lower risks and superior higher returns than non-B-BBEE rated firms. While in the long-run, Mehta and

Ward (2017) finds that the AltX quoted firms that have high B-BBEE scores generated lower returns than those with lower scores on the junior bourse.

Recent studies have also pointed out the B-BBEE programme is not yielding the desired outcome. Kruger (2014) measured the impact of B-BBEE on ten selected dimensions of business performance, surprisingly, this was found to be counter-productive. Unsurprisingly, Pike, Puchert, and Chinyamurindi (2018) notes that B-BBEE was promoting tender corruption and also putting an economic strain on SMEs. While, Mokgobinyane (2017) observes that being black-empowered does not really translate to better revenue, profitability and a larger market share for B-BBEE compliant JSE listed companies. Many researchers have also come to a conclusion that the effects of the high cost of B-BBEE compliance/actualisation can be the major cause of lower returns in some listed companies. In fact, Van der Merwe and Ferreira (2014) observes that the generic elements of the B-BBEE score had different impact on listed firm's market performance. This is because the aggregate effects can be prone to distortions due to the economic impact of the costs/benefits on each of the generic scorecard elements, which might actually cancel each other out.

To this end, it is important to empirically test if the compliance requirement of the JSE's AltX actually impacts on the B-BBEE score performance of listed firms. This is because matters concerning the implementation of the B-BBEE programme is a high priority area that is concerned with private sector contribution to building a more united, just and free South Africa. And is tantamount to the country achieving the NDP goals and objectives. Furthermore, the researcher in attempting to empirically ascertain the impact of B-BBEE compliance on listed firm's performance had to develop a model that comprises of proxies such as the BEE enabler group variable, firm attractiveness to stakeholder's variable, tax incentives and financial grants variables, corporate citizenship variables, as well as procurement, permits and licensing variables. This is considered important in this study because in order for the researcher to arrive at a valid/reliable conclusion there was also a robust requirement to measure/link empirically the impact of B-BBEE compliance on positive/negative firm performance. Given that many scholars have focused their research on the JSE's Main Board, studies that centres on the SMEs that are listed on the lower bourse would assist in shedding more light in this area of research. In line with the investigative research question 4 of this thesis, the following hypothesis was formulated:

**Ho<sub>4</sub>:** *The higher the compliance requirements for listing on the AltX, the less likely that there would be improvement in quoted firms B-BBEE performance score.*

Aforementioned discussion above dissected the theoretical model of this study and also aided the process of transforming and operationalising the conceptual framework of this research. Furthermore, since the main purpose of this study is to find out if SMEs will be able to ascertain the real benefits/drawbacks of listing on the JSE's AltX, as well as, establish its impact on entrepreneurship levels in South Africa, the researcher had no option but to frame arguments, questions and hypotheses that can accurately measure its impact on small businesses. Going further, in order to carry out an investigation that would reveal the impact that the JSE's AltX has on the performance of listed firms and determine the effect of this phenomenon on the level of entrepreneurship in South Africa, there was need to back up the underlying theory with empirical authentication that reinforces the literature in this field of study. Thus far, the discussions were devoted to the complex interactions that warranted the hypotheses formulation and development section of this thesis. However, the researcher had to present the main research arguments, first of all and then link it with the research questions of this study, as well as theoretically sync/translate them into a testable hypothesis. Although the operationalisation of the hypotheses is implemented here, the next chapter will present in more elaborate detail the methodological approach for testing the various hypotheses for this study. This will take cognisance of the individual constructs/proxies whose validity and reliability will also be tested and fit into a specified empirically model thereafter.

#### **4.9 CHAPTER SUMMARY**

This chapter presented a critical synopsis of the JSE's AltX and expounded in detail the activities of the lower bourse. The chapter begins with a precursory contextual literature review. Later on, the theoretical evidence supporting capital market listing was discussed. This provided an intellectual foundation for this study. Furthermore, the nature of the JSE's AltX was dissected, so that a thorough understanding of this phenomenon can generate insightful knowledge. This led to an analogous discussion about the similarities and differences between the JSE vs. AltX listing requirements. Also, the JSE's AltX relationship and contribution to entrepreneurship were analysed. A further step was taken to detail the advantages and disadvantages of listing on the junior exchange, as well as examine the impact of corporate governance on listed firms, while taking cognisance of the risks confronting them. Finally, a review of the performance of the JSE's AltX was carried out. This led to the development of the theoretical model/operationalised conceptual framework for this study, from where the research arguments, questions and hypotheses were derived/presented later on.

In order to ascertain the impact of listing on SME performance and entrepreneurship, it was deemed necessary to use a concise research

methodology to empirically test the research hypotheses for this study. Consequently, this necessitates and informs the next chapter. In the ensuing chapter, the research methodology section of this study would undertake a thorough estimation of this phenomenon. Additionally, the next chapter would specify the research methodology employed in this study, and also describe the research stages and the macroeconomic estimation procedure to be employed in the study. Besides, it would illustrate and validate the types of data, and the data collection and preparation method that would be used to arrive at the conclusions of this study.



## CHAPTER 5: RESEARCH METHODOLOGY

### 5.1 INTRODUCTION

The previous chapters of this study presented the literature review segment for this research. As an aftermath, the theoretical model as well as the conceptual framework for this study were diagrammatically illustrated putting into perspective the research problems, objectives and the research hypotheses that was discussed earlier, in the introductory part of this study. Obviously, operationalising the research concepts, and then turning them into testable hypothesis/constructs/variables becomes a herculean task and a fundamental core for this thesis. Despite how problematic this can be given the inconsistencies in the findings of past studies in this area, the adaptation of an appropriate research philosophy, paradigm and design eventually assisted the researcher to actualise the objectives of this study. Thus, the findings of this study are based on a solid foundation of conceptual modelling and empirical testing (Senik, 2010; Lakew, 2015). Moreover, in order for the conclusions of this study to be adjudged as valid and reliable, the researcher had to ensure that it measured what it set out to measure accurately and consistently well. Consequently, this chapter deals exclusively with the methodological considerations of the study, which is the guidemap/guideline for this academic voyage of discovery.

The chapter begins by introducing the research philosophy and paradigm of the researcher. Furthermore, by identifying the epistemological positioning of the researcher, the methodological issues and steps followed in this study are better understood, since it shows a bird eyes view of the overall research design and methods adopted in this thesis. This also informs a discussion relating to the research design, the rationale behind such an elaborate choice of the scientific methodology, sampling method, data collection techniques, statistical analysis techniques, choice of statistical software package, variable construct, model estimation equation modelling, ethical considerations, as well as the study's validity and reliability. The chapter concludes by reinforcing and defending the choice of the research approach, and also stating categorically the role played by the triangulation of data given the inconsistencies in earlier studies, therefore justifying the conclusions of this study. The purpose of this chapter is to show that pragmatism research philosophy and the pragmatic paradigm when fully integrated in a mixed model design (Creswell and Plano Clark, 2018) is the most advanced, flexible and dynamic research methodology that can contribute to new knowledge in this field of study.

## 5.2 RATIONALE FOR ADOPTING A RESEARCH DESIGN AND METHODOLOGY

Most researchers believe that the process of converting theory into data is what actually determines the way a study should be carried out. Several scholars are of the view that the skills to do this signifies the elite status, originality, the field and also the substance of academic achievement (Holbrook and Bourke, 2004). Unlike the exact sciences where theory can be defined as a plausible proposition or principle offered to explain phenomena, in social scientific literature, a theory is used to denote a set of statements/suppositions illustrating the relationships, as well as the effect of human behaviour (or actions) and the factors that affect or explain it. Further, a theoretical model or conceptual framework assists the researcher to summarise past literatures/studies that can guide a future course of action. With time most theories become a weak explanatory tool due to missing ideas, creative destruction and social immersion, thus requiring critical data to fully understand new relationships and outcomes, which are essential tools to establish a matrix of propositions and/or generalisations. Although, theory drives the research process, the researchers' view provides the necessary impetus that drives the entire process (Creswell, 2015; Creswell and Plano Clark, 2018). Consequently, by disaggregating the theory underpinning a phenomenon, the researcher gains the requisite knowledge and philosophy which acts as a guiding principle throughout a study.

The research philosophy offers a spectrum of perspectives (be it positivism, realism, interpretivism and pragmatism, and based on these elaborate choices leads to the application of deduction, abduction and induction in a research process. Most importantly, this choice implies that the researcher can adopt a methodological choice (mono method quantitative, mono method qualitative, multimethod quantitative, multimethod qualitative, mixed method simple and mixed method complex). Also, it dictates the strategies to be achieved in actualising these goals (i.e. through experiment, survey, archival research, case study, ethnography, action research, grounded theory, narrative inquiry etc.). While anticipating the time horizon for a study (be it cross-sectional or longitudinal), while ensuring that appropriate techniques and procedures are adopted throughout the data collection and data analysis phase of a study. The major advantage of carrying out a mixed methods research for this thesis is to assist in resolving the fallouts that led to the findings of both negative and positive impact(s) of the JSE's AltX on listed firm's operations in South Africa. That way, the researcher can cross-validate the conclusions of this research and also guarantee its reliability. From the literature review, the findings of two studies revealed that there exists a negative impact of the JSE's AltX on listed firms' performance (Mlonzi et al., 2010; Harvey, 2016), while three studies showed that the JSE's AltX has a positive abnormal effect on listed firms'

operations (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015). Similarly, studies carried out by Correia and Levinson (2012), Kruger (2014), Shadung (2014), Makhabeni (2015), Beneke (2016), Pelcher (2017) and Makoko and Muzindutsi (2018) concluded that there exist a kind of neutral effect on listed firm's performance.

This research design ensured that the evidence that was obtained in this study effectively addressed the research problem in an unambiguous manner and also provides the crucial evidence that adequately answers the research questions. For the outcome of this research to be justified, previously published literature was adequately reviewed from where the problem area in this study was identified (Creswell, 2015; Creswell and Plano Clark, 2018). This culminated in the development of the research hypotheses, which led to gathering of data to adequately test the hypotheses – using mixed methods model equation modelling to ascertain the veracity of such claims (whether true or false). Consequently, this method ensured that the researcher robustly combined scientific methodology via the triangulation of both the primary and secondary data. Cross-fertilisation also ensured that while applying subjective evidence from interviews to gain sensory experience, agreement and expert opinion from qualified JSE's AltX listed companies' executives, the tabulation of primary and secondary data vis-à-vis the interview results entailed a thorough reinforcement of the findings from the analysed data simultaneously and efficiently.

### **5.3 RESEARCH PHILOSOPHY**

Basically, research methodology is a theoretical perspective that is rooted in a formalised contextual framework whose aim is to organise knowledge, reality and truth in a coherent, logical and understandable form using best practices that can be replicated iteratively overtime from the standpoint of the researcher's views, beliefs and values. Research philosophy goes further by studying fundamental questions in a specialised and professional manner. The discovery and interpretation of facts can only be accepted as valid and reliable when logical argument and reasoning is applied to a scholarly inquiry. Although, it might sound plausible for the government to direct through the application of relevant laws such the B-BBEE statutes/legislation, for there to be fair and equitable redistribution of income in a post-apartheid South Africa. In practice, such an activist approach can cause an economic breakdown or distortion due to apprehensions by the dominant economic agents or conduits, because their businesses can be expropriated overtime, in order to achieve the government's objective. However, by gradually imbibing the culture of entrepreneurship on poor and disadvantaged communities, small businesses

can be developed and assist in generating accretive income for such households.

It is the same logical flow of ideas that necessitated this study to probe the impact the JSE's AltX has on listed SMEs performance and entrepreneurship levels in South Africa. Given the high business failure rate in South Africa, it was expected that listed firms would perform better than their unlisted peers, also it was expected that listed firm's performance could be linked to the level of entrepreneurship in South Africa. More so, the researcher had to investigate whether rising share capitalisation levels can lead to SME expansion. And most importantly, it was considered important to probe the impact of the contemporary compliance requirements for listing on the AltX with improvements in the B-BBEE performance score of quoted firms. Obviously, by methodologically measuring the impact of business listing on SME operations, it can be possible to accurately estimate quantitatively its direct or indirect benefits, in line with the NDP plan. Thus, the research methodology for this study intends to give a sound theoretical perspective for understanding which method, set of methods, or best practices suits the research objectives, problems, questions and hypotheses that were asked in the introductory part of this thesis.

Unlike prior viewpoints where reality is visualised as a spectrum that criss-crosses between quantitative and qualitative approaches with their attendant misconceptions or weaknesses, it was important that the researcher contextualised the outline of this research considering the pros and cons of each measure, and the combining the advantages of each type in other to resolve the inconsistencies from the findings of earlier studies. Despite the fact that empiricism can be regarded as the best way to determine the impact of the phenomenon under study through direct and verifiable observations, some hard facts in management science can only be inferred through qualitative measures like conducting interviews within the sample population. Consequently, the research philosophical stance not only influences the methodology but also informs the research instrument to be used in a study. This comprises both ontological and epistemological issues (Benton, 2017; Hofweber, 2020). Ontology can be described as the philosophical concept of being encompassing particularity and universality, abstractness and concreteness or possibility and necessity. This espouses the fundamental nature of reality, identity, modality, substances, relationships and certainty (Rosenkrantz, 2018; Hofweber, 2020). Due to the complexity of the phenomenon under study, the researcher adopted the hierarchical ontologies which implies that some entities may exist at a higher level, while other entities might depend on them fundamentally in order to reach a logical conclusion.

Meanwhile, epistemological dimensions in research philosophy implies that the researcher can discern between truth and justification, knowing, perception, social and formal reasoning, memory, testimony, empiricism, rationalism, scepticism and the structure of a justified belief and body of knowledge (Uebel, 2015; Benton, 2017). This thesis employs pragmatism which is a branch of empiricist epistemology – meaning that at the end of this observable scientific inquiry, the truth can be established. According to James and Gunn (2000) the use of pragmatist epistemology implies that valid theories can be accentuated into instruments, transcending ordinary answers into enigmatic opportunities which can be relied upon by both policy makers and the academe during decision making. Based on the ontological and epistemological perspectives of the researcher the main purpose of this study, which is to carry out an investigation that will reveal the impact that the JSE's AltX has on the performance of listed firms and determine the effect of this phenomenon on the level of entrepreneurship in South Africa was used as a firm foundation to answer research questions of this study. For this to happen, there was need to first understand the relevant concepts that relate to this study such as entrepreneurship theory, types and role, then understand and develop an overview of the small business development, distinguish between SMEs and the factors that ensure success of SMEs in South Africa, the South African government's intervention in the SME sector, as well as the nature of the JSE's AltX and the theoretical evidence supporting capital market listing. These theoretical considerations were adequately addressed in chapters 2, 3 and 4 of this study.

As a pragmatic study, the researcher intends to combine both quantitative and qualitative techniques, in order to triangulate the findings of the analysis and then compare and contrast them with previous studies. However, this thesis employs more of deduction because the study gradually reviews the theoretical considerations before operationalising data, which comprises of both primary and secondary data, from where these theories and hypotheses are empirically tested. This is because the pragmatism philosophy ensures that the nature of knowledge, theory, concepts, meaning, belief and evidentiatio are all best viewed in terms of their practical uses and application (Dromi and Stabler, 2019). Moreover, since a part of this study deals with the impact of the B-BBEE compliance requirements on listed firm's performance, the findings of this research would allow policy makers to determine how to make the NDP work in a pluralistic, unequal and problems-oriented environment using the JSE's AltX as a yardstick to measure the effects of the policy. Another important reason for employing this philosophical stance is because original research can only be considered to be so when it comprises primary research (which is new knowledge), rather than synthesising secondary data (which summarises prior studies). But it is imperative to also review the annual statements of JSE's AltX

listed firms, due to the fact that it is the only viable way of ascertaining the financial performance of quoted SMEs in South Africa *ceteris paribus*. Taken together, the relationship between these study's findings would cross-validate each other through the triangulation of data, and also resolve the inconsistencies of earlier studies.

According to Creswell and Plano-Clark (2018) the epistemological rationale supporting the widespread use of the pragmatism philosophical stance is that it entails the combination of both quantitative and qualitative data. This permits the researcher to have an open-ended view, thus enabling the impact of change in a phenomenon to be accurately measured relative to particular situations. Furthermore, this methodology relies on empirical verification and validating ideas that arise from studying the impact that JSE's AltX has on listed firm's performance, as well as on the level of entrepreneurship in South Africa via rigorous scientific testing. That way ideas can be codified through proxies in terms of their observable and measurable consequences. Also, elements of both quantitative paradigms (i.e. questionnaire survey, secondary data) and qualitative paradigms (e.g. semi-structured interviews) can coexist in a single study. Since direct normative relationships exist between the philosophical stance, research paradigm, methodologies and methods, as well as data types the triangulation of research methods provides robust, qualitative data/findings, and also enhances the validity and reliability of this kind of study. Unlike a single-based approach, mixed methods research can be considered to be a very effective method of research because it accommodates different approach and crystallises facts based on the triangulation of information from various sources. Hence, the researcher is at liberty to freely move back and forth (dynamically) between theory and facts when studying a particular phenomenon, and also fine-tune the methodology of a thesis pragmatically based on the research problems.

#### **5.4 TYPES OF RESEARCH PHILOSOPHY**

The advancement of new knowledge has been a fundamental core of contemporary research. Various scholars have come up with several notions about how best to conduct a research from a philosophical standpoint. Generally, these approaches rely on the epistemologically and ontological disposition of researchers who are interested in answering poignant questions ranging from humanities, arts, geography, social sciences and sciences. Some of the known form of research philosophy are constructivism, empiricism, positivism, antipositivism, postpositivism, realism (i.e. critical realism and subtle realism), interpretivism and pragmatism. In this study, it is important to briefly understand what the following philosophical stance implies in universal research.

### **5.4.1 POSITIVISM**

This is a philosophical theory that employs empiricism and believes that all genuine knowledge is either a posteriori or analytic/tautological (Macionis, 2012). Likewise, it proposes that theories and laws can be validly and reliably verified in a scientific manner. Also, positivists believe that all authentic knowledge is based on experience, which is characterised by mainly quantitative techniques such as objectivity and deduction (Creswell, 2015; Creswell and Plano Clark, 2018). On the contrary, this philosophical stance has been criticised for its reductionism, because truth can be linked with sensory experience, but does not end there.

### **5.4.2 REALISM**

This research philosophy believes in mind-independent existence of knowledge, thought and understanding (Miller, 2019). It is grounded in mathematical, ethical and metaphysical objects and can apply to the past/future, one's self and the world. Likewise, it uses deduction as a reasoning tool/methodological approach. Realists claim that the truth comprises of both cognitive representations and reality, which can be improved upon overtime. Its critics are of the view that this line of thought can be deceptive if not well scrutinised (Saunders et al., 2016).

### **5.4.3 INTERPRETIVISM**

Interpretivism is the philosophical stance that is based on the notion that the perceptions of a phenomena being studied are shaped by various concepts and language (Macionis and Gerber, 2011). It is also known as antipositivism, negativism and antinaturalism. Proponents of this epistemological position believe that the social world cannot adequately studied using scientific methods that are derived from pure sciences. They also criticised post-positivists whose theories were considered too general, one-sided and ill-suited to reflect the nuance, diversity and variability found in human interaction/investigation. Furthermore, it uses subjectivism that is based on participant observation in a priori disciplines, such as jurisprudence, sociology, logic, ethics, or aesthetics. In legal jurisprudence, interpretivists believe that there is no separation between law and morality, however there exist underlying differences between the two concepts. Critics are of the view that studies carried out by interpretivists cannot be validated because it is subjective in nature, and its reliability cannot be guaranteed over time.

#### **5.4.4 PRAGMATISM**

This is a research philosophy that is deeply rooted in human experience. It addresses epistemological questions such as: “How do we know?” and “What is the most fundamental, valid and reliable way of knowing?”. Furthermore, pragmatism words, intellect and thought are the methodological tools and instruments for induction, deduction, abduction, prediction, problem solving and action (Saunders et al., 2016). Similarly, pragmatists assumes that epistemological justification is a function of relationships between beliefs, given the fact that there are many ways to conceptualise the world, its content and the resultant phenomena (Dromi and Stabler, 2019). Also, the explanation and prediction of phenomena is considered more important than how a study accurately describes objective positivist reality. Accordingly, pragmatism encompasses empiricism, fallibilism, verificationism and naturalism as fundamental elements of its philosophy. It has been successfully applied in public administration where government programmes must work in pluralistic settings that are problems-oriented environment (Weber, 2013). Critics have criticised pragmatists for being relativistic because they often ignore that there is a significant ambiguity between the effects of a proposition and the belief in a proposition (Stolcis, 2004; Weber, 2013).

#### **5.5 JUSTIFICATION OF THE PARADIGM**

The adoption of the pragmatic paradigm in this study relies on the philosophical stance of the researcher which is pragmatism. It is envisaged that the empirical model to be developed would robustly fit the operationalised constructs for this thesis, and can be used as an exemplar for new studies. This methodology will be a paradigm shift due to critical anomalies observed from past studies about the impact of the JSE’s AltX on listed firm’s performance and the level of entrepreneurship in South Africa. As earlier discussed, pragmatism is closely linked with the mixed methodological approach. It combines the positives of both the quantitative and qualitative approach, while compensating simultaneously for their demerits, thereby triangulating positivism and interpretivism philosophies seamlessly in one study. It is therefore considered important by the researcher that the next section should provide an explanation of what both quantitative and qualitative research is, in order to broaden our understanding of the phenomenon under study.

##### **5.5.1 QUANTITATIVE RESEARCH**

It is a deductive approach that employs the empirical testing of theory through the quantification, collection and the analysis of data (Creswell and Plano Clark, 2018). Similarly, it uses mathematical modelling, theorisation and hypothesis to empirically investigate the relationships that exist between



observable phenomena. Expectedly, the results of quantitative empiricism would likely yield an unbiased result that can be generalised to a larger and related population sample. Critics are of the view that quantitative studies may not be generalisable in certain the social sciences, arts and humanities given the limitations of such data.

### **5.5.2 QUALITATIVE RESEARCH**

This kind of research study individuals' knowledge of their social reality and environmental perception (Pernecky, 2016; Rosenthal, 2018). It is a subjective research which is based on the induction of first-hand observation, questionnaires, interviews, focus groups, recordings, documents artifacts and participant-observation. Qualitative methods include ethnography, grounded theory, thematic, conversation, content and discourse analysis, biographical research, note-taking, narrative inquiry and interpretative phenomenological analysis (Rosenthal, 2018). Most of opponents of this type of research question the trustworthiness of these kinds of research (Creswell, 2015; Pernecky, 2016; Rosenthal, 2018). Likewise, participant reactivity, theoretical saturation and the inadequacy of interpretivist research for testing cause-effect hypotheses are amongst the main limitations of qualitative studies.

### **5.5.3 PRAGMATIC PARADIGM**

According to Lakew (2015) knowledge is transient, provisional, never indisputable or perfect because it is a product of the historical era and the cultural context within which it is focused on. More so, the use of quantitative data compensates can lead to the generalisation of qualitative data, while the qualitative part of a mixed study can be used to explain observed relationships discovered during the quantitative phase of a study. He goes further to state that using a bi-focal lens rather than a single lens enables pragmatic researchers to be able to zoom into the microscopic detail of a research or to zoom out towards an indefinite scope of a phenomenon. Thus, creating a leeway for researchers to combine the macro levels and micro foundations of a research problem. Pragmatic paradigm empowers mixed methods researchers with the vital tools to implement a flexible investigative technique that delves further into a problem and then use cross-validation techniques to verify findings from various probes. According to Creswell and Plano Clark (2018) mixed methodological studies carried out by pragmatists are beneficial because the result in the triangulation, complementarity, development, initiation and expansion of data. Consequently, the use of pragmatism and the pragmatic paradigm in this study, implies that the researcher employs a mixed method research to answer the pertinent questions that were asked in the introductory part of this thesis. The impact of the JSE's AltX on listed firm's performance and

entrepreneurship in South Africa is a relevant construct of central interest in this study. The researcher sought to determine the impact that the JSE's AltX has on listed firm's performance, and also to determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa. Furthermore, the researcher wants to quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms, and to ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms. Due to the complexity of this study and the inconsistencies in the findings of earlier studies, the use of the pragmatic paradigm became inevitable – so as to enable the researcher to achieve the aims and objectives of this study. This approach is not without precedent and is in line with the work of Senik (2010), Lakew (2015), Zepeda (2015) and Levasseur (2020).

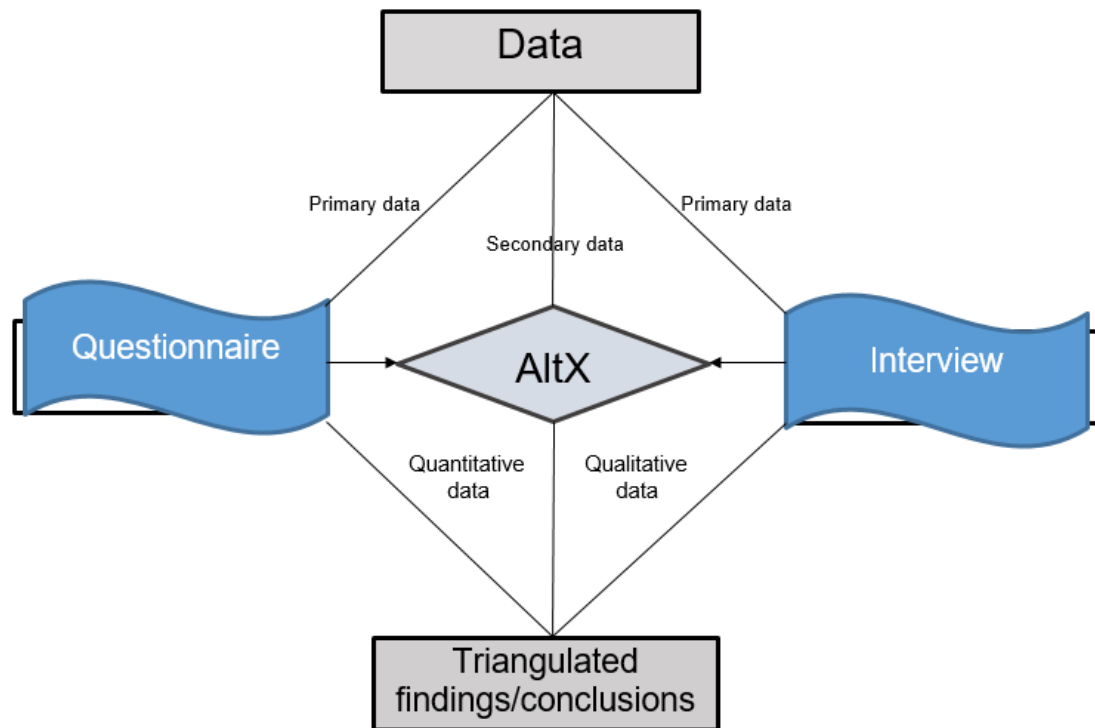
## **5.6 RESEARCH DESIGN**

Every research is required to follow a set of plans, procedures or specifications that would enable its processes, outcomes and findings to be replicated over time (Creswell and Plano Clark, 2018). Given its scientific roots, a research design can adopt a rational model, technical problem-solving approach or a reason-centric perspective, be it in industrial design, construction, engineering or architectural design, where reprography can be used to duplicate drawings, plans and systems which can be interpreted and used for mass production (Brooks, 2010). In Social and management sciences, a research design is basically a structure, framework or blueprint guiding a research study. This expectedly is in tandem with the selected research paradigm and methodology. Furthermore, the research design informs the data collection approach (i.e. where, when and how the research information will be elicited), as well as the method of analysis, and how the ensuing results would be interpreted (Senik, 2010; Lakew, 2015). Based on a three-dimensional typology of a mixed methods research design, this thesis utilises a mixed methods sequential explanatory design to achieve the main objectives of the study. This implies that the quantitative data is first of all collated, before qualitative data is elicited – in order to reinforce, clarify/validate, contextualise, or address questions that arose from the quantitative analysis phase. Unlike quantitative studies that uses deduction, qualitative studies use inductive reasoning when making inferences to the research design and data. However, since this study is a mixed study, it uses abductive reasoning to yield a plausible conclusion. In fact, making inference to the best and unbiased datasets, as well as design is not an easy task. Pragmatic researchers are expected to lie somewhere close to one end of the spectrum (be it deduction or induction). Consequently, from the onset in a mixed method research, the researcher is expected to determine whether the qualitative and quantitative approaches will assume an equal status and/or

whether one technique dominates the other (Lakew, 2015; Johnson and Christensen, 2019).

Furthermore, the researcher carried out an overview of the methodological steps that were employed in recent JSE's AltX studies. It was observed that almost all studies in this area used various econometrics quantitative techniques (Mlonzi et al., 2010; Correia and Levinson, 2012; Kruger, 2014; Mashaba, 2014; Shadung, 2014; Heerden, 2015; Makhabeni, 2015; Beneke, 2016; Harvey, 2016; Pelcher, 2017; Makoko and Muzindutsi, 2018). Only Ungerer, Gerber and Volschenk (2015) utilised a template analysis qualitative technique in their study. While Beneke (2016) recommends that for a future study, a qualitative approach should be employed in determining the value creating capabilities of the AltX listed companies due to the exigencies of quantitative data. Related studies carried out by Moolman (2004) employed an asymmetric structural econometric model of the South African stock market. Similarly, Neneh (2013) used quantitative secondary data to study the return of IPOs on the JSE in order to investigate listed firm success and failure patterns. However, only Nemaenzhe (2010) study employed mixed methods to carry out a retrospective but elaborate analysis of failure causes in South African small businesses. Based on the experience of the researcher, having considered the relative pros and cons of each of the research design techniques, the mixed methods approach adequately suited the objectives of this study.

According to Lakew (2015: 225) use of mixed methods by various studies attempts to draw on the merits of both quantitative and qualitative approaches, while inter alia minimising the weaknesses of each technique. At this watershed moment of SME and AltX literature, rising calls for deeper integration of qualitative research insights would definitely enrich, reinforce and clarify the quantitative survey results of earlier studies. The predominant usage of quantitative survey questionnaire is known to link research hypothesis and premise with more objective, valid, reliable data, results and conclusions (Creswell and Creswell, 2018). More so, the adoption of relevant sampling procedures within a statistical population definitely lower sampling costs, as well as hasten the data collection process, which produces more sound and generalisable results with more robust predictive value. However, low response rates usually lead to measurement errors and the use of unqualified key informants (Creswell and Plano Clark, 2018). Likewise, the use of econometric proxies while analysing secondary data is also known to create a quick snapshot of the interactions in a dataset, and also assist in specifying the level of significance of relationships in a dataset. Nevertheless, spurious correlations can be churned out by unreasonable relationships that may not cause or effect a study's econometric variables, especially when examining a longitudinal research (Yin, 2014).



**Figure 5.1: Research design (Source: Authors' compilation)**

The diamond satellite graph depicted in Figure 5.1 above shows how various data sources are integrated in this study. Since this study is a mixed study both quantitative data and qualitative data would be elicited in this thesis. Raw data or primary data will be sourced by the researcher using survey questionnaire and semi-structured interviews. While the secondary data will be sourced from the JSE's AltX, as well as other relevant databases. Unlike raw data which have not been subjected to processing, data transformation and cleaning, secondary data are sourced from large and error-free higher-quality databases that are unfeasible for a single researcher to collate individually due to time and cost. The secondary data for this research was sourced from the JSE, INET BFA (IRESS database) formerly McGregor BFA, GEM Global Report and other relevant government and multilateral sources. According to Creswell and Plano Clark (2018) the use of mixed methodologies leads to the triangulation of data, because such research seeks convergence and corroboration of results from different methods studying the same phenomenon. As matter of fact, the use of qualitative techniques will assist in generating rich, in-depth, relevant and theory-building data that capture new ideas, realities and theoretical insights, especially when the sample population is small (like it is in this study), therefore limiting the generalisability of statistical findings (Creswell and Creswell, 2018; Johnson and Christensen, 2019). That said, the objectiveness of the quantitative data (which was gathered for this research) ensures greater transparency, trust, reliability and the generalisability of the findings of this research, *ceteris paribus*. Consequently, mixing data will enhance the

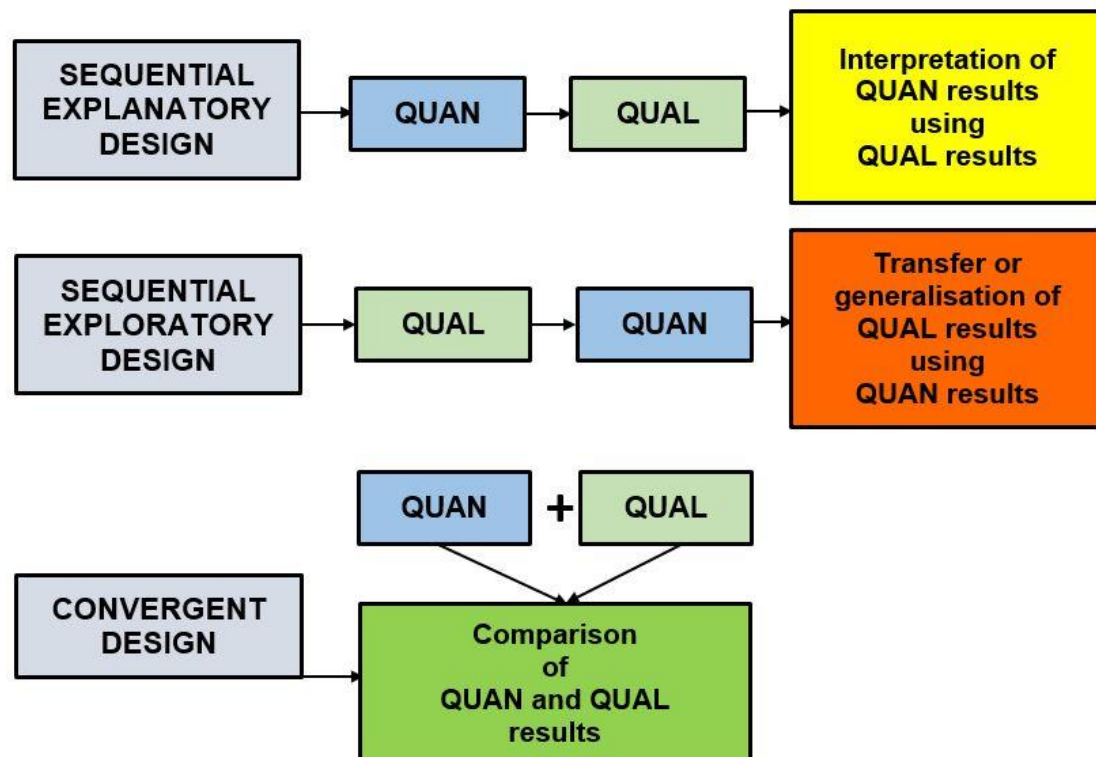
robustness of the findings, and also reinforce the conclusions of this study given the inconsistencies that arose from prior studies (Yin, 2014).

## **5.7 SYNERGISING THE MIXED RESEARCH DESIGN AND METHODOLOGY**

Synergising the research design with the research methodology of this study is a tough task, which requires the meticulous expertise, attention to detail, as well as the experience of the researcher in order to ensure its proper execution. Without mincing words merging quantitative and qualitative data is an arduous endeavour. Opponents of this research design argue that integrating incompatible scientific paradigms is unnecessary. However, pragmatism research philosophy offers a way out, because every methodology has its own downside. Moreover, the use of mixed methods or models comes with the advantage of being able to overcome single method biases in research (Lakew, 2015). In addition, this enables the researcher to freely control the data and/or gain access to numerous levels of the phenomenon that is being studied. More so, in order to resolve the inconsistencies in previous studies and also to reinforce the findings of earlier studies, in this thesis, the mixed research design makes use of survey questionnaires, secondary data and semi-structured interview single case studies method (Creswell and Plano Clark, 2018). Thus, the use of this strategy involves more than just collating and analysing both kinds of data, because it strengthens the micro-foundation/findings of this research (relatively better than when only one research approach is being implemented).

As a sequential explanatory mixed methods research that follows Creswell and Plano Clark (2018) as well as Johnson and Christensen (2019) propositions regarding this kind of study, it is necessary to report the findings of both the quantitative and qualitative output separately at different stages of a study. Apart from different questions/hypotheses being posed at different stages of this research, both qualitative and quantitative data are collected and analysed separately at different stages of the study before a final interpretation of the entire analysis is made later on (Lakew, 2015). Consequently, it became imperative to use a sequential multiphase explanatory mixed method design in this study, so that the deductive part of the analysis can be followed by an inductive case study. In essence, this gives way for the collection and analysis of quantitative data followed by the collection and analysis of qualitative data, before data integration, triangulation and interpretation all through the summary, findings and recommendation phase of this study. As earlier stated, the quantitative findings were deliberately intended to take a primary role and supersede themes that will arise and be substantiated by the qualitative case study. Although the quantitative approach was implemented through a questionnaire survey which was used to test the study hypotheses, qualitative semi-structured interview case studies were used to support and reinforce the quantitative findings. Thus, this way some sublime aspects of this thesis can be

addressed, such as the primary research questions, as well as other sub questions.



**Figure 5.2: Types of mixed research design (Source: Nicolau et al., 2017)**

Figure 5.2 illustrates the various types of mixed research design that can be associated with the pragmatism research philosophy. According to Nicolau, Castonguay, Levine, Hong, Summer Institute 2015 Participants and Pluye (2017) combining mixed methods produces in-depth results of great relevance to both researchers and policy makers, because QUAN (i.e. quantitative methods) and QUAL (i.e. qualitative methods) draws on the strong points of each other, thus allowing researchers to develop a fathomable, more comprehensive understanding of a research phenomenon. That said, the complexity of contemporary research problems has led to the rise and popularity of the mixed research methods. This is because contextual information can be integrated with generalisable facts to produce multiple perspectives which enhance the validity, reliability, value and transferability of a study from just being a research output to its application in practice. However, there exist a plurality of mixed methods design, this makes the selection of an appropriate design to be a daunting task for inexperienced researcher. Three main variations of mixed methods designs were found to be popular amongst pragmatists which are as follows:

### **5.7.1 SEQUENTIAL EXPLANATORY DESIGN**

In this type of mixed research design the model analysis comprises of two distinct phases i.e. the presentation of the quantitative results would be directly followed by the qualitative analysis (Creswell and Plano Clark, 2018). Also, the interpretation of the quantitative results is based on the results of the qualitative phase of the study (Nicolau et al., 2017). This implies that the QUAN results provide a general overview of the research problem/question, while the QUAL results refine, elaborate, extend and proffers a more nuanced view of the phenomena under consideration (Subedi, 2016). Since this study adapts this design, the researcher would shed more light on this mixed method design with respect to its operationalisation thereafter. One major advantage of this design is that it can be used to resolve conflicts or inconsistencies in a niche area of research. According to Creswell and Plano Clark (2018) the design can also be used to describe a phenomenon, to interpret unanticipated results, or to explore certain outcomes in more detail.

### **5.7.2 SEQUENTIAL EXPLORATORY DESIGN**

When developing and testing new constructs and/or instruments, the sequential exploratory design can be used to explore various phenomena (Subedi, 2016). According to Creswell and Plano Clark (2018) the researcher first of all collects qualitative data followed by quantitative data, and then uses the QUAL results to explore the phenomenon, before transferring, interpreting or generalising the QUAL results using the QUAN results. Themes developed in the qualitative phase of the study can be used to develop new theories and/or amend existing ones. Berman (2017) recommends that three stages of analysis are to be conducted in this mixed method design. Firstly, the primary qualitative will be implemented, followed by the secondary quantitative phase, and lastly, the integration phase is carried out in the third phase of the analyses. Here, the two strands of QUAL + QUAN data are connected, thus extending the findings from the initial qualitative exploratory analysis conducted in the first phase of the analysis. Nicolau et al. (2017) posits that the sequential exploratory design can be used to develop a theory in the qualitative part of a study, while the fundamental elements of the phenomena can be tested in a larger inferential population sample, so as to enable the generalisation of the findings of such a study (Subedi, 2016; Berman, 2017; Creswell and Plano Clark, 2018).

### **5.7.3 CONVERGENT DESIGN**

Subedi (2016) is of the view that in the convergent parallel mixed methods design analyses both QUAN and QUAL data discretely, before comparing the results from both datasets from where an interpretation of the findings of the results are established as to whether these outcomes support, reinforce or

contradict each other. Consequently, this design intentional converges or compares both QUAN and QUAL datasets after analyses. According to Creswell and Plano Clark (2018) conducting both QUAN and QUAL independently or in an interdependent (i.e. concurrent) manner ensures that integration occurs during the data interpretation phase of the study or via data transformation, which in essence assures that researchers can obtain contrasting but complementary data. Conclusively, the convergent mixed method design can be quite intricate, but suitable when it is carried out by experienced pragmatic researchers. Analysts and handlers of the convergent design are expected to have extensive knowledge of both methods, and precisely discern the findings from each phase of the study (Subedi, 2016; Berman, 2017; Nicolau et al., 2017; Creswell and Plano Clark, 2018).

#### **5.7.4 OTHER MIXED METHODS DESIGN**

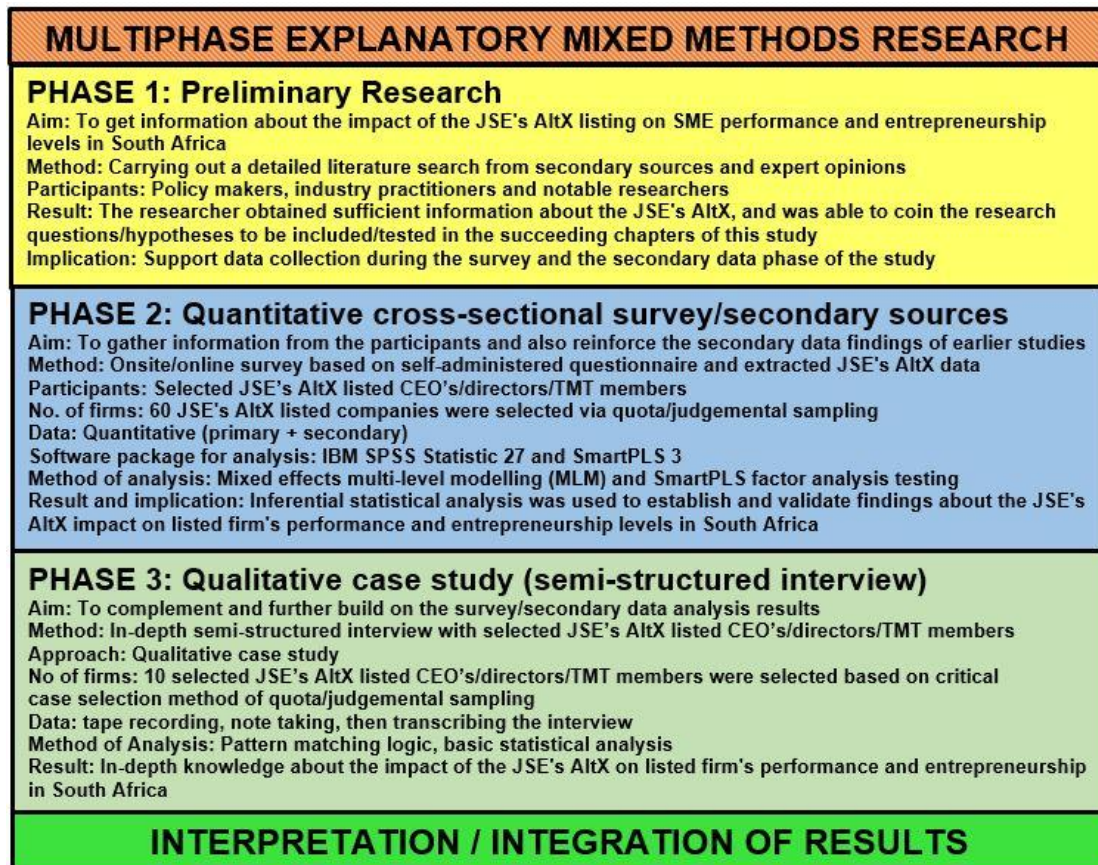
Creswell (2011) points out that there are six types of mixed methods research. However, among them three designs that are enumerated above were found to be widely used by pragmatic paradigm scholars (Nicolau et al., 2017). Interestingly, there are also three not so popular mixed methods research design such as the embedded design, the transformative design and the multiphase design. According to Creswell and Plano Clark (2018) the embedded design can be used to collect both QUAN and QUAL data simultaneously, however, one form of data plays a supportive role to the other dominant one. Furthermore, Subedi (2016) posits that unlike other types of mixed methods design, the transformative design provides an orientating perspective of pragmatism research philosophy since it can use any of the four abovementioned mixed design within a transformative framework. Most times, the framework can be used to address social issues such as inequality or racism, in order to bring about a positive change in marginalised and underrepresented segments of the population (Creswell, 2011). Lastly, the multiphase design (which mirrors the transformative design) involves the use of a series of phases or discrete studies in order to adequately examine a fundamental research problem, theme or subject matter. This composite design builds on the explanatory, exploratory, convergent and embedded designs, hence it can be used to logically present the outcome of a pragmatic study to both the academe and policy makers (Nicolau et al., 2017; Creswell and Plano Clark, 2018).

#### **5.8 OPERATIONALISING A MULTIPHASE EXPLANATORY MIXED METHODS DESIGN**

Figure 5.3 below depicts an overview of the operationalised multiphase explanatory mixed model research design that was implemented in this study. As earlier discussed in the previous section, in an explanatory mixed model



design the QUAN is presented before the QUAL. However, the based on the researchers' experience the term 'multiphase' was inserted so as to indicate the use of a series of phases or discrete studies in order to adequately examine the fundamental research problem, question, theme or subject matter that are addressed in this thesis.



**Figure 5.3: Operationalised multiphase explanatory mixed methods research design (Source: Authors' compilation)**

In Phase 1, the preliminary research pertaining to this research was carried out. A detailed literature search from secondary sources and expert opinions in order to ascertain the gap that needs to be addressed. Later on, in Phase 2 quantitative techniques was used to collect, organise and analyse four hypotheses that are linked with the research questions and problems of this study. Since this kind of data can only be analysed using deductive techniques – in order for it to be generalisable, it was not in-depth enough to address some certain aspects of this research on its own. Consequently, Phase 3 uses qualitative case study via a semi-structured interview protocol to obtain the underlying details that quantitative techniques cannot extract in this study. Following the aforementioned three phases, the multiphase explanatory sequential design seems to be the most suitable method when compared to other mixed method approaches.

### 5.9.1 PHASE ONE – PRELIMINARY RESEARCH

Carrying out a research of this magnitude can be very problematic if not well thought through. The researcher, first and foremost had insightful discussions with the JSEs' leadership, sector experts, industry practitioners and policy makers before carrying out a thorough literature review on this phenomenon. This was necessary in order to carry out an investigation that will reveal the impact that the JSE's AltX has on the performance of listed firms and also determine the effect of this phenomenon on the level of entrepreneurship in South Africa. Key individuals who are knowledgeable of the operations of the JSE's AltX, as well as the operations of listed SMEs in South Africa were identified via online sources and through personal contacts. The researcher even used his membership status of the Institute of Directors in South Africa (IoDSA) to gain access to directors of various organisations. Only highly qualified CEOs, directors and TMT members were targeted based on their work and educational experience, in order to ensure the authenticity of their various viewpoints. More so, a detailed literature search was carried out based on journal articles, conference presentations, dissertations, government and multilateral agencies policy statements, as well as from online news outlet information.

The outcome of the preliminary research for this study assisted the researcher to conceptually identify the operational processes of the JSE's AltX, as well as conceptualise all the entrepreneurship theories and processes that capture and incorporate the idea that SME capital market financing contributes significantly to broader industry disruption. Furthermore, part of the outcome of Phase 1 of this design is that it enabled a quantitative identification and description of the JSE's AltX listed firms using theory-based empirical research. This culminated in the development of a model that elucidates a rational, specific and targeted approach for listed and intending SMEs that wants to register on the JSE's AltX. Aside this, the research objectives, problems, questions and hypotheses were constructed after undertaking this aspect of the study. Also, based on this preliminary research throughout other succeeding chapters of this study were developed. Moreover, the literature review on entrepreneurship theory, SME development and capital market financing informed the consideration of contextual and conceptual issues for empirical investigation. This was aided side-by-side by government national policy, industrial policy, the NDP, the enabling Laws of South Africa as well as other strategy documents which were consulted by the researcher.

Apart from examining the literature in the focal domains of this study, literature on methodology and conceptual models and frameworks on SME financing, entrepreneurship and related disciplines were also reviewed. The purpose of this additional investigation was to devise a detailed theoretical model and/or

conceptual framework that would capture all the relevant constructs for investigation, and to come up with a suitable methodology to test these constructs empirically. This led to the development of the survey questionnaire instrument for the quantitative phase of this study, and further informed the follow up qualitative case study, which is based on an appropriate research philosophy i.e., pragmatism. Finally, the researcher reaped the benefits of a thorough groundwork, because by implication the preliminary research supported data collection and analysis during the survey distribution and the secondary data phase of the study, as well as during the qualitative phase of this research.

### **5.9.2 PHASE TWO – QUANTITATIVE CROSS-SECTIONAL SURVEY & SECONDARY SOURCES**

As stated earlier, the second phase of this study's mixed research design was conducted through a quantitative questionnaire survey approach with the sole objective of gathering information from the participants, as well as to reinforce the secondary data findings of earlier studies. The quantitative survey questionnaire was preferred because the data available on JSE's AltX impact on listed firm's performance and entrepreneurship levels in South Africa is limited. Also, the exist disparities in the findings of similar studies. Some studies find that there was an abnormal positive impact on SME performance, while others revealed that there exists an abnormal negative effect on listed firm's performance. Unsurprisingly, a few studies' conclusion maintained a neutral stance on this phenomenon. Quite frankly, SMEs in South Africa are known to be struggling due to a number/combination of factors, how a firm is affected therefore depends on the sector, industry and the number of competitors operating in its location. Similarly, some of the previous studies utilised econometric indicators in their analysis with limited application to entrepreneurship and management studies. Hence, basing policy advice on an unsubstantiated evidence and frivolous conclusions derived from statistical generalisations and aggregated data tends to be, in most cases, worrisome, misleading or irrelevant to AltX listed firms in South Africa. Carrying out a primary study therefore became inevitable, since the available evidential facts cannot be wholly relied upon.

Using quota sampling sixty (60) JSE's AltX listed firms were selected for this study. Within this population sample includes some promoted firms to the JSE Main Board, as well as some suspended and delisted firms who were inadvertently sanctioned for one reason or two by the JSE. Consequently, this mix of selected companies provides a rich source of information for comparison purposes. Although, there is a high level of geographic concentration of manufacturing activity in the Johannesburg area of South Africa, this sample

shows that other vicinities outside the city centre were represented. This makes the resulting dataset a rich source of inferential statistics.

A combination of both onsite/online self-administered survey questionnaire were distributed to the study participants. The quantitative section of this study was used to test the hypotheses in order to establish whether firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs, to determine if the performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa, to ascertain whether the rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion, and lastly, to establish if higher compliance requirements for listing on the AltX improves quoted firms B-BBEE performance score. As earlier stated, these hypotheses were developed based on the theoretical model and the conceptual framework for this study. Similarly, the secondary data was sourced from the JSE, INET BFA (IRESS database), GEM Global Report and other relevant government and multilateral sources. This data was elicited in order to validate, reinforce and confirm the reliability of the investigation – since previous econometric analysis had conflicting findings.

### **5.9.3 PHASE THREE – QUALITATIVE CASE STUDY (SEMI-STRUCTURED INTERVIEW)**

Quantitative research is known to be confirmatory, generalisable and deductive in nature, while qualitative research is exploratory, contextual, theory-building and inductive in nature (Creswell and Creswell, 2018). In order to complement for the inadequacies of the quantitative phase of this study, a qualitative case study was carried out using a semi-structured interview. By allowing the interview subjects to freely vent their opinion aids the researcher in developing rich contextual information that yields a deeper understanding of the phenomenon that is being studied (Johnson and Christensen, 2019). Thus, the qualitative approach can be used to provide insightful answers to the investigative questions mentioned in the introductory chapter of this study. Although, most of the research questions can be answered empirically, the qualitative research is useful in investigating the meanings, pull and push factors, as well as the interpretations that the JSE's AltX listed CEO's/directors/TMT members give as reasons why SMEs list on the AltX, and how they intend to expand in future when their share capital increases over time. Given that the findings of earlier studies were inconsistent, it makes sense to supplement the quantitative phase of the analysis with a more thorough qualitative study that establish in words, themes and context the foundations or basis for listed firm's strategic actions and operational processes *ceteris paribus* (Yin, 2014).

This study used a case study approach to source information from 10 participants – who were selected via a critical case selection method of quota/judgemental sampling (Creswell and Plano Clark, 2018). This method was applied because it involves an up-close, real-world context, in-depth and detailed examination of a contemporary phenomenon using various sources of evidence. The evidence presented in a case study is typically inductive, with a particular focus on developing a rich and in-depth study rather than pursuing a broad, generalisable understanding which does not apply at all times to social phenomena. According to Lakew (2015) this form of qualitative study can be used to explore, describe in detail, or explain any phenomena using their natural setting. A primarily explanatory research approach was followed in this study. But, some elements of exploratory analysis and thick descriptive analogy are apparent in these cases based on the holistic nature of the research questions/hypotheses.

Furthermore, the researcher used a single–case study research strategy with pattern matching and explanation building to connect repeated measures, the unique revelations of participants, as well as the manipulation of the independent variables of this research (Yin, 2014). Consequently, single case studies were conducted in this thesis using a semi-structured interview protocol to explore the research questions/hypotheses. This ensured that rich responses were elicited from the interviewees based on a solid foundation of sublime depth and thick underlying information. Likewise, it became imperative that the imposing themes of these semi-structured interviews was to obtain information along the lines of data that were gathered from the questionnaire survey and the secondary data – which will be analysed later on (Johnson and Christensen, 2019). This approach therefore explored in greater detail those minute elements of the study that a generalised quantitative study will not be able to reveal while examining the propositions that have been developed. During these interviews, the researcher was able to tape and video record the conversations, and also take notes simultaneously, before transcribing the interview. Lastly, the final outcome of this phase of the research method design was the generation of an in-depth knowledge about the impact of the JSE's AltX on listed firm's performance and entrepreneurship levels in South Africa. This data will be used to reinforce the claims that were made in previous studies.

#### **5.10 JUSTIFICATION FOR THE PREFERRED MIXED METHODS DESIGN**

According to Creswell (2015) adopting a mixed method design enables the researcher to provide a more elaborate and comprehensive answer to the research questions of a given study, which goes beyond the limitations of a single (i.e. QUAN or QUAL) approach. In fact, the use of this design signifies a paradigm shift in research design and methodology, because it gives the researcher freedom to decide which, what, how and where the design/method

can be applied to any social phenomena given the expertise, experience, perspective, as well as the level of intuition of the researcher. By relying on abductive reasoning, mixed-methods design offered the researcher an ample opportunity to conceive new ideas and also to produce more robust measures of association, despite the distinctiveness of the streams of design that are being applied (Yin, 2014; Creswell and Plano Clark, 2018; Johnson and Christensen, 2019).

As earlier stated, this design informs a deeper understanding of research problems and complex phenomena which may not be possible using only one method. More so, the use of triangulation enhances the validity of inferences especially when one method cross-validates the other. According to Lakew (2015) triangulation broke the glass ceiling in research methods and design, by removing the intellectual wedge that created a wide gap between various methodologies, thus ending the dominion of the mono-method eldorado purists in research. Recent literature studies about the reason for the increased usage of this design includes but not limited to participant enrichment, analysis of static features, instrument fidelity, triangulation, treatment integrity/fairness, significance respecification, QUAN leading to QUAL studies and vice versa, as well as qualitative research being able to reinforce the findings of generalisable quantitative studies. While mixing became inevitable because as suggested by Creswell (2015) there may exist: an insufficient argumentation using either QUAN or QUAL; multiple angles argumentation might provide varying perspectives; combined perspectives may provide a cogent argument with more evidence; and the increasing popularity of the pragmatic paradigm might lead to a band wagon effect which warrants the use of this design; as well as the dependence of researchers on using cutting edge tools such as a methodology that is intuitive and seamlessly links the praxis between theory and practice.

Furthermore, applied business management topics such as entrepreneurship, SME development, and the motivations to list firms on the capital market can be multidisciplinary, transdisciplinary, interdisciplinary, wide in scope and ultimately very complex to measure. Hence, the use of this design was not without precedence, because several scholars have resorted to the mixed methods design as a way out of this measurement dilemma (Yin, 2014; Creswell and Creswell, 2018; Creswell and Plano Clark, 2018; Johnson and Christensen, 2019). Without mincing words, mixed methods design provides more insight, a rich dataset and a deeper understanding of the phenomenon being studied than the application of a single method viewpoint. Consequently, based on the merits of this design discussed above and the pragmatism research philosophy, in this study the researcher adopted the mixed method design approach.

## 5.11 POPULATION SAMPLING

The target population for both the quantitative (i.e. the survey questionnaire) and the qualitative (i.e. the semi-structured interview) phases of this study was all the JSE's AltX listed firms in South Africa. This was based on the total number of listed firms on the lower bourse in 2016 (which is the base year for this study). Given the fluid nature of the listing status of registered firms on the JSE's AltX, it was considered important by the researcher to use this available sample population. One interesting aspect of this population was that over the years some of this firms got promoted to the JSE's Main Board, others got suspended for various reasons, while some were outrightly delisted from the junior exchange. The choice of 60 listed JSE's AltX firms was arrived at using quota sampling, because the population of interest are the only individuals that can clearly reveal the impact that JSE's AltX has on listed firm's performance and entrepreneurship in South Africa. From within this sample population 60 survey questionnaires were distributed to the selected listed SMEs. Also, 10 interviewees were selected for the qualitative phase of this study from within this sample population.

According to Cheyne (2016) 120 companies have registered on the lower bourse. However, the delistment of 29 firms (i.e. 24 per cent) that have been registered on the lower bourse and the migration of 31 firms (i.e. 26 per cent) to the main board motivates the researcher to probe the impact that listing on the JSE's AltX has on firm performance. An important point of consideration is that when you add the number of delistings to the number of firms that have been promoted to the Main Board it makes a sum total of 60. Again, the researcher narrowed the lens, and it was observed that some of these firms have either gone bankrupt or have been liquidated, while those that were promoted were either acquired or taken over by other larger companies. Then, some of the firms that have cross listing in other countries had no real physical presence in South Africa. After segmenting the population into mutually exclusive sub-groups, the researcher used his vast analytical experience and judgement to select the 60 listed firms. The use of quota sampling in the quantitative phase of this study was justified due to the obvious fact that the variability within the sub-group is minimal when compared to the variability which affects the entire population.

Furthermore, ten (10) JSE's AltX listed CEO's/directors/TMT members were selected using quota/judgemental sampling based on critical case selection method. The use of quota sampling became necessary due to the researchers' lean budgetary considerations and the limited time duration for completing this study. After choosing the subsets from the sample population, judgemental sampling was used to select the number of categories and the individuals to choose from each subset of the sample frame. Also, critical case selection

method was used identify why the selected respondents' opinions can be representative enough to allow analytic generalisation. This implies that the opinions gathered from the case that was selected in this study can be used to reveal insights that applies to similar cases. Expectedly, the precautions taken

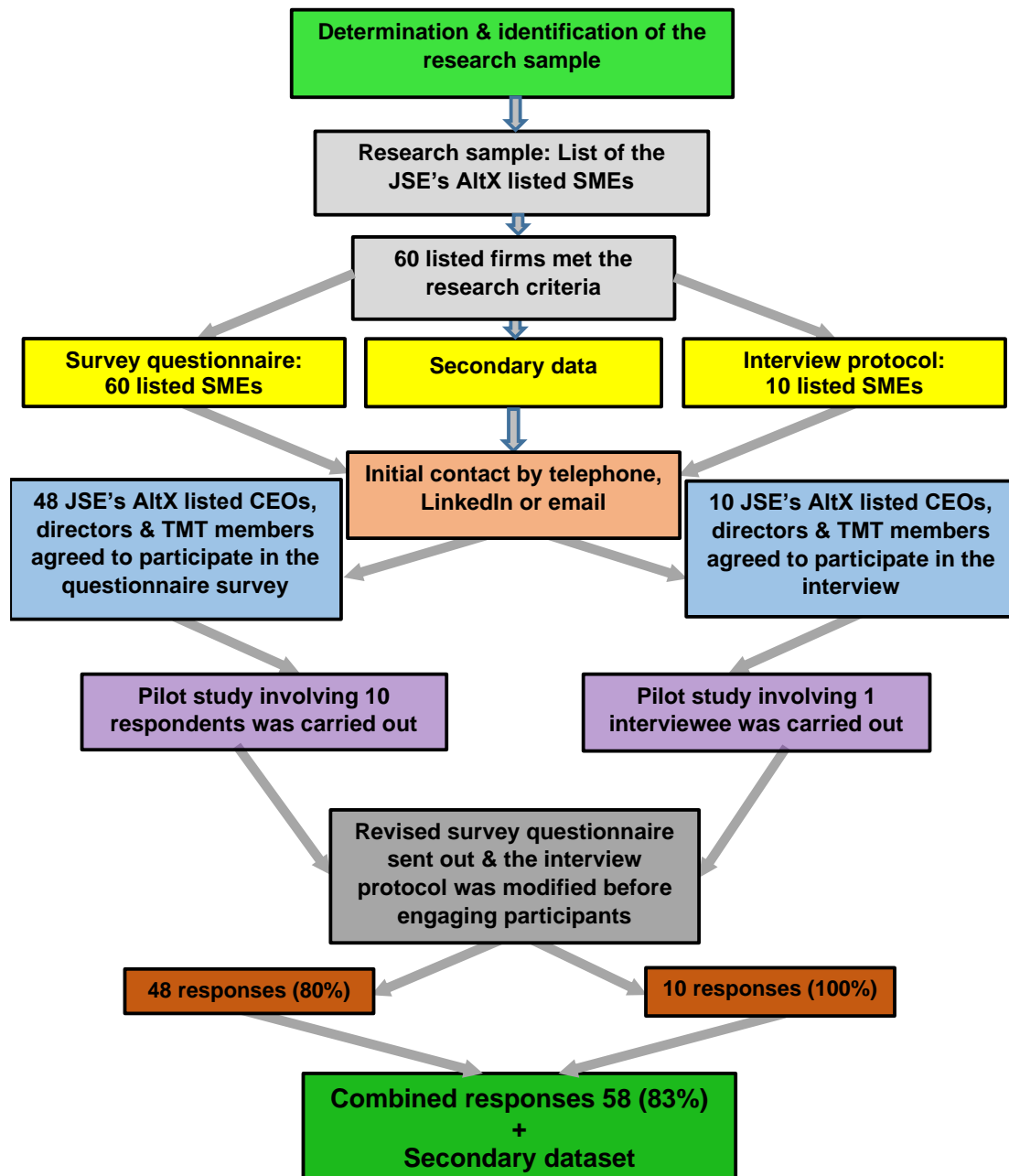


Figure 5.4: Sampling procedures for the study (Source: Authors' compilation)

by the researcher indicates that the outcome of this study would have a high statistical precision, hence this led to the exclusion of firms that did not exhibit the ideal characteristics/criteria of the sample population from this study. The detailed procedures followed in identifying, accessing and selecting the chosen



listed JSE's AltX firms for the survey/interview phase of this study is shown in Figure 5.4.

The qualitative phase of this research identified good informants that have a good grasp of the phenomenon under investigation, because they could provide a sufficient depth of information. And also ensured that the sample size was adequate, so as to avoid/reduce the effect of data redundancy or saturation. This study therefore follows the recommendation of Morgan et al. (2002), Guest et al. (2006) and Yin (2014) to justify the sample size of between 10-12, since this resulted in the identification of between 80-92 per cent new themes and concepts before saturation. Ten (10) JSE's AltX listed CEO's/directors/TMT members constituted an adequate population sample size, which is consistent with the recommended threshold. Likewise, adding more participants to the quantitative survey would have led to data gathering issues considering the COVID-19 pandemic restrictions, the fundamental lack of knowledge about the operations of the exchange by many staffs that work for AltX listed firms. This is because the actual day-to-day operations of these firms are carried out by very few persons, while some of the staffs/management/directors are only recorded on paper, but do not really play an active role in supervising/directing their processes and/or procedures which constitute real decision making.

## **5.12 DATA SOURCE AND DATA COLLECTION PROCESS**

There are various kinds of data sources, which can either be primary or secondary in nature. Therefore, the type of data source also determines the data collection process or procedure. The following section examines these two types of data sources in detail.

### **5.12.1 SECONDARY DATA SOURCES**

Although primary sources of data were considered vital to actualising the objectives of this study, secondary sources of information were collected and analysed based on precedent from the findings of earlier studies. Consequently, after reviewing journal articles, conference papers, textbooks, and dissertations the relevant secondary sources for this thesis includes the JSE, INET BFA (IRESS database) formerly McGregor BFA, GEM Global Report, government and multilateral sources, as well as other relevant sources. Most of the secondary data for this study were also elicited from the JSE's AltX listed firm's annual statements from 2003-2016. More so, special attention was given to latest low-cap capital market textbooks, entrepreneurship textbooks, small business development textbooks and journal articles and conference papers about the AltX. In South Africa, these kinds of publications are rare in

this area, but the major secondary sources available were from government agency reports and publications such as SEDA, the DSBD, the DTI etcetera.

These secondary sources were absolutely vital in examining the impact patterns, the accompanying challenges, as well as in understanding the role that government regulation and intervention plays in this sector of the economy, as discussed in previous chapters. This enabled the researcher to get a precise and an in-depth knowledge on the impact that the JSE's AltX has on listed firm's performance and entrepreneurship levels in South Africa. Without mincing words, the researcher is of the view that the sources chosen are to a reasonable extent valid and reliable, especially as they were sourced directly from the annual audited reports of these companies, as well as from the JSE. In fact, the researcher had to communicate directly with the CEO of the JSE to be able to obtain these relevant AltX information/data, which from the researchers' knowledge cannot be found in any other publication in South Africa. These sources enabled the researcher to observe various viewpoints, for and against existing theories, concepts and models in order to have an unbiased stance during the gathering, collection, cleaning and analysis of these information later on in this study. Even if a large sample was used to gather primary data, the actual financial and economic performance of an AltX listed firm can only be measured accurately using company financial details such as the rate of turnover/revenue, profit after interest and tax, value added, return on assets, earnings yield, operating profit and loss, number of employees, salaries and wages, B-BBEE score etcetera. Hence, the researcher was obliged to collect and use secondary data in this study, in order to reinforce the results from both the primary and qualitative study.

### **5.12.2 PRIMARY DATA SOURCES**

As earlier stated, the raw or primary data for this study was elicited from a survey questionnaire and a semi-structured interview using a sample of 60 respondents/10 interviewees who are the CEOs, directors and TMT members of the JSE's AltX listed firms respectively. The self-managed questionnaire contained 5-point Likert scale closed format questions that asked participants to provide a response along a continuum of possible responses. The questions in the instrument were pre-tested to eliminate ambiguity and problems with wordings. Furthermore, during the pilot phase of the study, wording problems in the questionnaire were corrected either by implicit or explicit simplification and/or elimination outrightly. Also, the assessment time of the questionnaire assessment was measured to ensure that it takes approximately 15 minutes for participants to complete it. Consequently, these measures ensured that the researcher saved considerable time and cost, and also improved the chances of a clear outcome, since any noticeable design flaw was corrected before the actual questionnaire administration. Also, the completed questionnaires were

checked for validity and reliability before analysis. After the ethical approval for the research was approved, mailed invitation for survey was sent out for either email fill-up, online response or for delivery to their respective office address to fill-up, depending on their choice. But, with lockdown restrictions being placed nationwide due to the COVID-19 pandemic, the online form was the main choice of the survey participants.

In line with the aim of this research which is to reveal the impact that the JSE's AltX has on the performance of listed firms and the level of entrepreneurship in South Africa, it was considered necessary to carry out a qualitative study using a semi-structured interview protocol. Besides, the qualitative semi-structured interview protocol contained open-ended questions that allows for flexibility in gathering data that cannot be addressed by the use of a survey questionnaire. Hence, the qualitative data collected was analysed later on, using content analysis, pattern matching and logical narrations, as appropriate to ensure that the findings of this research are robust and valid (Guest et al., 2006; Hair, Black, Babin, Anderson and Tatham, 2006; Creswell, 2014; Yin, 2014). This ensured that the final outcome of the qualitative phase of this study reinforced the findings of the quantitative phase of this research simultaneously. Consequently, the findings of this study can be adjudged to be credible, reliable and believable because of the quality and accuracy of the data that were adopted. Also, the use of a rigorous methodological design guaranteed the level of confidence, uniqueness and the truthfulness of the findings based on the qualitative context/content analysis.

Based on the experience of the researcher, the main reason for this design style was that the various data collection modes were not mutually exclusive. Therefore, this study's method of analysis ensured that the data gathered was employed in a complementary fashion to build on each other's strengths, and also to compensate for each other's weaknesses. This approach thus amplifies the triangulation of both quantitative and qualitative data that were gathered in this study. Furthermore, the qualitative data gathered was analysed to explore, describe and explain this phenomenon using different analytical techniques in detail. Consequently, the elicited data can be analysed in such a manner that would uncover the patterns, coherent themes, meaningful categories, and new ideas using content analysis, pattern matching and logical narrations, as appropriate, so that a more nuanced perspective of this phenomenon can be put forward.

Finally, the collection of distributed survey questionnaire (which was completed in approximately 15 minutes) took between 1-2 months after distribution of questionnaires to these participants. Although, if there was no response, reminder letters were also sent out. Similarly, it took between 1-7 days after the informant agrees to participate in the semi-structured interview to get a

favourable time that is convenient for the interviewee to be interviewed successfully. One good thing about this study's questionnaire survey and semi-structured interview protocol administration was that there were various options/modes to select from be it an emailed questionnaire, a mailed questionnaire, an online fill-up, a Zoom video call or by a personal assessment appointment. Likewise, after three weeks, reminders were sent to those that have not either returned their survey form or participated in a scheduled interview session.

Yin (2014) posits that no single source of data, has an absolute advantage over others. Since, different data sources are immensely complementary, contemporary research studies are encouraged to use as many sources as possible, because the validity of any scientific study increases when confirmatory sources of evidence are referred to. Based on the key informant approach, all the respondents and interviewees were well versed in this area of research. This assumption can be validated by virtue of their experience and position as executives in the JSE's AltX listed firms, which implies that they have the requisite experience to discern the information about the operation, management, strategy, as well as the challenges faced by small businesses that are registered on the junior board. Consequently, the researcher assumes that these top officials had enough knowledge to comprehend and also respond to questions concerning the impact of the JSE's AltX on listed firm's performance and entrepreneurship in South Africa.

### **5.13 MEASUREMENTS AND SCALING**

In Lakew (2015) measurement can be ascribed to be the process of systematically assigning numbers or other symbols to objects and their properties to enable the use of mathematical notions and tools in studying and describing objects and their relationships certain pre-specified rules. According to Fisher (2010) while statistics mainly deals with data analysis, summary statistics, descriptive statistics and inferential statistics, measurement calibrates instruments using common metrics for easy interpretation and improvement at the point of use. Also, the focus of measurement is towards the operationalisation the information gathered to a suitable data format such as nominal data, ordinal data, interval data, continuous and discrete data, as well as ratio data. This results in the quantitative meaningfulness of information numbers, individual processes and relationships within variables.

Consequently, each respondent was assigned a number from 1-60. Similarly, the survey instrument was based on a similar study that was carried out by Lakew (2015). The survey instrument was used to retrieve participants demographic information and also asked questions about the impact of firm listing on the JSE's AltX, the impact of firm listing on the level of

entrepreneurship in South Africa, the impact of increased share capital levels influence on the expansion and performance of listed firms, as well as the impact of compliance requirements on the B-BBEE score performance of listed firms, in addition to a comments section. All of these questions were asked using the five-point Likert scale response option of the form 1=strongly disagree; 2=disagree; 3=undecided; 4=agree; 5=strongly agree. Likewise, as discussed earlier, factor and reliability analyses were conducted in assurance that both construct and discriminant validity can be guaranteed for all the selected measures. Furthermore, these measures were examined in a pilot study, and verified for face validity by ten (10) JSE's AltX listed executives with input from the ethical approval committee, which is made up of eminent university professors and lecturers who are well published authors both locally and internationally with extensive teaching and consulting experience in the areas of entrepreneurship and SME development in South Africa.

#### **5.14 QUESTIONNAIRE ADMINISTRATION**

The researcher ensured that the details of the survey questionnaire administration phase of this study was sufficient to convince the target group that their input and cooperation was necessary, since it would enable the interviewer to ascertain the impact of listing on the JSE's AltX on firm performance and entrepreneurship levels in South Africa. Although, there was no significant monetary reward for participation, each respondent was assured that they would get a copy of the completed thesis. And also, they were made to understand that their participation was a kind of contribution to the development of listed firms, SMEs and entrepreneurship levels in South Africa. Hence, the findings of this study would certainly serve as a comprehensive input/conduit for industry practitioners, policy makers, and researchers in this field of study. In addition, the researcher had to use the key informant approach to determine who was to serve as a respondent in the firms that were selected in this research – i.e. based on their expertise and the sectorial activities impact area.

Similarly, adopting the key informant approach is not without precedent within the SME/entrepreneurship field of study, where the key decision-maker or senior executive is expected to play a very prominent role especially with respect to a firm's strategic direction, action or goal. In particular, in SME/entrepreneurship research the CEO, director or TMT members are known to be the key decision-makers, and also responsible for driving the vision and mission of these types of firms. Usually, a company's CEO is the preferred contact person to answer these kinds of strategic questions, however, they can be sometimes be too occupied which leaves room for directors or TMT members to be interviewed. Sometimes thou, some confidential information may not come from them if there are business secrets to protect, such CEOs

would tell their secretaries to inform the researcher that either their time schedule is fully booked or that based on company policy they do not respond to questionnaire surveys. Hence, the researcher had to select the most suitable ones, who can be trusted with revealing an unbiased view of the impact that the JSE's AltX has on listed firm's operations and entrepreneurship levels in South Africa. Therefore, the questionnaire was addressed to anyone of them who agrees to divulge the requested information to the researcher – i.e. the CEO, director or TMT member.

Finally, in order to increase the response rate, the researcher attempted to initiate email, phone and LinkedIn correspondence with each respondent. Talking directly with the respondent often resolve problems such as unsuitable timing, questionnaire forms being filled by the wrong person, firm business closure, or knowing if the participant does not want to participate in the study anymore for reasons best known to them. However, the major reason for contacting all the respondents was to briefly introduce the survey to them, and to request for their consent to participate in the survey. This showed the respondents how valuable their responses are, with a view to completing this research. If a respondent agreed to participate in the survey, he or she would be given an option of filling-up either a paper copy, an emailed copy or an online copy. This variety of options ensured transparency, flexibility and convenience during the questionnaire administration phase of this study. Also, by giving the participants sufficient time to fill-up the survey questionnaire, they could comfortably and conveniently answer the survey questions whenever they preferred. This was particularly important and necessary due to the tight schedule and busy nature of these top executives.

### **5.15 THE QUALITATIVE SEMI-STRUCTURED INTERVIEW**

The qualitative phase of this research was carried out using a case study approach. It was considered plausible by the researcher to use a semi-structured design technique given the complexity of the phenomenon under investigation. More so, the use of a semi-structured interview protocol allows the interviewer to ask questions in no particular order using open-ended questions, thus permitting the interviewee to provide thoughtful insights along a 2-way channel of communication (Creswell, 2014; Yin, 2014; Creswell and Plano Clark, 2018). However, interview checklists were used to formalise the questions and to keep the key informants on track. Just like the procedures followed in the questionnaire administration plan, prior to an interview, the interviewees were contacted to indicate if they would like to be a part of the interview process, and if they agreed, a suitable and convenient time will be arranged for the interview. This enabled the researcher to prepare and also to obtain in-depth information in the interviewee's natural environment in a relaxed mode. Furthermore, the researcher used directive probing and non-directive

probing techniques to get broader, more specific, personalised and clearer information about the topic (Creswell and Plano Clark, 2018). The main advantage of this interview format over others was that it allowed the interviewee to volunteer more information, rather than just providing a structured response that might hamper any attempt to provide a full understanding of this phenomenon, as was the case during the survey phase of this study.

#### **5.16 ENUMERATION DATES AND THE SETTINGS FOR DATA GATHERING**

After the University of South Africa (Unisa) DESTTL Ethics Review Committee approved the researchers' application for research ethics clearance on 02/08/2018, the data gathering phase for the current study began on the 10<sup>th</sup> of January 2019 and was completed on the 7<sup>th</sup> of July 2020. Follow up qualitative interviews were carried out between May 2020 to May 2021. Expectedly, both the quantitative and qualitative phase of this study took place across South Africa where most of the JSE's AltX listed companies have their operational headquarters.

#### **5.17 RESEARCH QUALITY**

In contemporary parlance, quality research is carried out via a scientific process that is transparent, rigorous and systematic in nature. Its end result leads to evidence that can be validated by precedent sources due to their robust, ethical, peer-reviewed assessment with well cited references that can withstand scrutiny. According to Lakew (2015) it also involves making it clear to the reader fundamental insights such as research design and management from where inferences about the research quality of a study can be made. In addition, the evidence provided by the researcher can be used to link the praxis between theory and practice. Hence, in a good and quality study findings and conclusions can be used to inform policy making decisions. Whereas research quality is usually discussed in terms of validity and reliability, it also entails the respect and consideration of other researchers' viewpoints (Yin, 2014). Creswell and Plano Clark (2018) point out that a quality research is synonymous with a good research design. This is because it matches methods and methodology with research questions and objectives by carefully selecting the research subjects (i.e. the sample population) using measurements that are unbiased – with little or no inferential error.

In this thesis, the researcher ensured that the entire study was well structured and detailed enough to constitute a good quality research. From the statement of problem, objectives and questions to the actual research design and methodology, the researcher meticulously considered all constructs and proxies before operationalising them. This assisted in improving the validity (i.e.

the generalisability) and reliability (i.e. the repeatability) of this study. Consequently, the researcher among other things ensured that systematic errors were avoided throughout this research, especially during the process of transferring and coding theoretical constructs into measurable items.

### **5.17.1 RIGOUR OF THE QUANTITATIVE PHASE**

Several research studies are inundated with claims about the validity of their findings. While the validity of a study is absolutely important in order to gain relevance and citation among the scholarly community, it entails more than what attains on the surface about the validity of a research given the various kinds of validity that exists in contemporary research methods. Every researcher is therefore tasked with the scholarly duty to ensure that their literature, concepts, measurements, findings and conclusions are as precise as possible *ceteris paribus* (Yin, 2014; Creswell, 2015). Forward-thinking researchers have gone deeper by finding out how valid a valid research really is. For instance, internal validity raises concerns about evidence supporting the extent to which a study's design and data results in trustworthy and accurate conclusions, especially with respect to cause-and-effect relationships in its dataset. Due to influence of social phenomena and interaction, this study was not treated as a scientific experiment, hence, exact cause and effect relationships between the proxy variables were not expected.

The aim of this study was to determine the impact that the JSE's AltX has on listed firm's performance and entrepreneurship levels in South Africa. It was expected that a definitive cause and effect relationship between proxy variables would be established in this study. Based on these assumptions, the internal validity of this study ensured that the research design can accurately measure the cause-effect or causal relationships between the dependent and independent variables (Creswell and Plano Clark, 2018). This significant supposition is exhibited during the hypotheses testing and analyses phase of this study. Also, the internal validity of this thesis was taken care of during the data analysis. Thus, the researcher used precise measurements that fit the well stipulated/defined research problem to develop and implement a good sampling plan that took cognisance of relevant concepts during the operationalisation and testing of all of the research hypotheses.

According to Lakew (2015) the research design of a given study must be without serious errors which often lead to low internal validity, and it should be also able to develop proxy variables, as well as define measuring instruments in such a way that ensures high validity continuously. While using a survey instrument, secondary data and interview protocol in this study, sustaining the internal validity for this study meant that the researcher had to calculate the extent to which the responses/datasets/key informant opinions reflect the same



attributes, despite being in different form. Then, the subsequent use of triangulation ensured the cross-validation of the data gathered from various sources, consequently, guaranteeing to the integrity of the responses/dataset/answers simultaneously. Although, most mixed studies use abduction to reach a conclusion, as earlier stated, many pragmatists have been found to lean more towards a particular spectrum of the divide that lies between deduction and induction. Because this study relied more on deduction, effort was made by the researcher to ensure the preciseness of the data that was gathered and analysed thereafter.

Similarly, effort was made by the researcher to reduce the issue of a false positive/false negative which triggers a Type I error/Type II error respectively. The researcher, meticulously avoided selection bias throughout this study. Hence, the null hypothesis was tested in three different iterations using primary (i.e. survey questionnaire and qualitative interview) and secondary data. Standardised cut-off levels were used to test the validity and reliability of the study, and variables that did not meet the minimum threshold were dropped thereafter. Moreover, the statistical conclusion validity ensured that the mathematical relationships between variables, as well as the probability that this mathematical calculation provides an accurate estimate of the co-variation in the dataset was made. The effect of alternative explanations was considered especially as it relates to the identification of spurious relationships that make little or no sense in explaining hypothetical relationships. Likewise, the use of appropriate statistics such as low threshold, 95 per cent confidence interval, 5 per cent level of significance, residual estimation, as well as various levels of multi-level measurement increased the overall internal and conclusion validity of this study.

Just like the internal validity relates to how well a study is conducted, the external validity of a study relates to how applicable the findings/conclusions of the research are to the real world (i.e. practice). According to Yin (2014) external validity is the extent that empirical results/findings can be generalisable beyond the study itself to other contexts. While during the internal validation of a study the research rigour is *prima facie*, during the external validation of a research the application of methods leads to the limitation of the generalisability of a study. Consequently, in this study effort was made by the researcher to ensure the external validity of thesis by setting a feasible inclusion and exclusion criteria for the sample population, variable identification and testing significance. This guaranteed the generalisability of the sample population across the population of interest, different measures, settings and/or timing. The use of quota/judgmental sampling helped to improve the external validity in the current study.

Most questionnaire administrators prefer using drop off and pick up strategy to reduce non-response rate. Then, following it up with the traditional reminder emails or by reaching the respondent telephonically. But due to the new normal of COVID-19 lockdowns, the researcher prioritises the online questionnaire fill-up which was very easy to use. As earlier stated, this study uses the pragmatic paradigm, which assumes that finding a permanent external validity is not practicable. This is because reality is constantly changing, therefore the external validity of this study was mainly centred on answering the research questions. Also, in an attempt to achieve the external validity of this study, the researcher had to use a very adaptive sampling methodology which takes cognisance of the research data based on the findings of previous studies. It is expected that given the measures taken, the researcher therefore guarantees that the outcome of the analyses will be valid. As a matter of fact, this study has a high response rate of over 80 per cent, while the non-response rate was only about 20 per cent. Although, quota/judgemental sampling was used to determine the sample population and sample size, based on the researchers' experience, given about 40 per cent delistment and promotion to the Main Board, the sample size was adequate for this study. Therefore, the findings of this thesis can be assumed to be generalisability across the population of interest. In a similar vein, the researcher was able to manage the following issues which could have reduced the external validity of this study:

- i. This study did not suffer from the unusual type of individuals or place error, because the researcher used carefully selected representative sample in South Africa where most of the JSE's AltX companies carry out their operations and are located.
- ii. Since this was not a longitudinal study, the short data gathering duration implied that external validity was not affected by the peculiar time effect. Likewise, the researcher used proximal similarity technique by undoubtedly describing how the current study's context can be extended to an identical population frame.
- iii. Through a meticulous sampling procedure, firm promotion to the Main Board and delistings were taken care of during the study period, these ensured that the diverse representation of different firms revealed varied opinions – depending on the circumstances surrounding their company's operations. Furthermore, the researcher conducted follow up surveys where eligible participants did not respond or return their forms via mail, email or online in a timely manner. This assurance mechanism therefore restricted this study's sample population to only the selected sample frame.
- iv. The overall quality of the sampling frame for this study was monitored periodically via the verification of inferential information during data

gathering and collection phase of the study, so as to check for out of scope elements that might negatively impact on the external validity of this thesis.

As earlier stated, the measurement of the research questions in the survey questionnaire enabled the researcher to statistically substantiate the validity of the information that was uncovered by the numerical data presented in the secondary data analysis and the semi-structured interview protocol. Also, the use of both primary and secondary data ensured that data triangulation cross-verifies the information that is contained in this study, and compensates for the inadequacies in a one-source data. Furthermore, reliability analysis was conducted on all the multi-items scales to check the internal consistency of the scales, model and proxy variables that were be used in this study. This research adopts a cut off of 0.7 for Cronbach's alpha coefficient. In order to improve the internal consistency of these scales and to make them reliable for use in this study, any item that does not meet the stipulated Cronbach's alpha was dropped. Also, the use of multilevel mixed effects model ensured that within and group level effects were precisely measured at levels 1, 2 and 3, so that spurious correlations do not impede the findings and conclusions of this study.

According to Lakew (2015) the reliability of a study is the overall consistency with which a measuring instrument produces certain results under the same conditions. Creswell (2015) posits that asking cogent questions about whether a research measure show stability across individual units of observations is important, because this can lead to high measurement errors which can discredit the overall findings of a study. However, there exists several variations of what the term reliability implies in a study as a result of numerous factors such as equivalency, stability of individuals, inter-rater agreement, and internal consistency of outcomes (Trochim, 2006; Trochim, Donnelly and Arora, 2015).

In order to measure item reliability in this study, internal consistency was chosen as the appropriate method of measurement. Since this test calculates the consistency of assessment scores across items in an instrument, it is relatively easy to implement, especially with the use of Likert 5-point scale in the survey questionnaire. The ensuing pilot results were pre-tested using descriptive statistics and factor analysis, and checked for internal consistency reliability by means of a Cronbach alpha test together with other relevant tests that would be discussed in the succeeding sections in this chapter. Also, the rigorous design and administration of the survey questionnaire increased the internal consistency in the current study. Based on previous studies, literature review and several exploratory study's findings, the item constructs and questions were developed to guarantee high level internal consistency, while the pilot test helped to restructure questions that were not clearly worded. In fact, negatively worded questions were avoided throughout this thesis, and also, secondary data items were deleted and/or modified if they had Cronbach's

alphas that are lower than the permitted threshold for this research. IBM SPSS Statistics 27 and SmartPLS 3 statistical software packages were used to test for the reliability statistics in this study based on the threshold of  $>.70$  as stipulated in past studies. This study's internal consistency was found to be greater than  $>.80$  on average. An elaborate diagram depicting this test estimation will be shown in the succeeding part of this thesis.

According to Rossiter (2011) measurement is the process of observing, codifying and recording the information that are collected as part of a research effort. As stated earlier, the researcher ensured that both the survey questionnaire and interview protocol, as well as the secondary data that was used in this study accurately covers the concept that it purports to measure. Consequently, this implies that the statistical measurements that are used in this study has face validity. Furthermore, the researcher ensured that the empirical data adequately covered all aspects of the construct or phenomenon that is being investigated, implying the content validity of this study (Creswell, 2015). Likewise, the researcher ensured that both the concurrent and predictive validity of this study's statistical model has a high criterion or concrete validity as per the related outcome of this research. Also, steps were undertaken by the researcher to ensure that the empirical evidence, as well as the theoretical rationale presented in this study adequately supports the findings of this study via a systematic test procedure which has an effective construct validity. This can be either convergent/nomological or discriminant in nature.

Furthermore, many researchers have agreed that the corresponding result of a good research measurement leads to construct validity. The choice of this study's sample population ensures that inferences made can be parsimoniously operationalised without any hindrance. However, it is important to note that this study's test validity would involve the provision of evidence-based and theory-based support for the interpretation of the test scores result for the research. This would be used to reinforce the findings and recommendation of this study. In addition, the researcher rigorously tested the measurement scales of this study for validity, unidimensionality, reliability and possible biases mathematically (Hair, Black, Babin, Anderson and Tatham, 2010) using confirmatory factor analysis (CFA), variance inflation factor (VIF), average variance extracted (AVE), Cronbach alpha, Spearman's rank correlation ( $\rho_A$ ) and the Fornell-Larcker Criterion. Lastly, the conclusion validity of this study would ascertain if the hypotheses of this study can be either accepted or rejected with strong empirical proof.

In a quantitative study, validity is linked with whether a survey question/secondary data manages to measure what it is supposed to measure or not. According to Creswell and Plano Clark (2018) the validity of a study assumes various forms, which can be in terms of face, content, concrete,

construct, and external validity. In entrepreneurship and management research, the use of a survey instrument/secondary data that has been applied in past studies amplifies the validity and reliability of the instrument. In fact, quoting references which alludes to the efficacy of a demonstrated successful use of the survey instrument/secondary data guarantees its face, content, concrete, construct and external validity. Hence, as Creswell (2015) puts it, using a validated instrument is preferable to constructing a new instrument from the ground up (Lakew, 2015). This informs the use of previous study's instruments/secondary data being used as a yardstick in this study. Consequently, this informs a brief discussion on the types of validity below:

- **Face Validity:** This is the extent to which the test subjectively matches the construct or concept it attempts to measure. Here, the researcher uses logically reasoning and common sense to ascertain the veracity of this claim, especially with respect to the test being able to achieve the aims and objectives of the study. Based on the literature review, conceptual framework and the theoretical model for this study, it is obvious that this research has a significant face validity. Furthermore, the input from seasoned academics and pilot study participants helped to significantly boost the face validity of this research.
- **Content (or logical) validity** move a step further than face validity by stating categorically what the research superficially appears to measure. The use of a fully representative sample population in both quantitative and qualitative measurements reinforces the face validity of this study via the triangulation of evidence from multiple sources. While past studies concentrated on just the financial/economic impact of registering on the lower bourse, this study went further by objectively measuring the impact of compliance to the B-BBEE regulation on listed SMEs' operations in South Africa. This assisted the current study to have a high content validity. Similarly, the ethical committee adjudged the measurement constructs (such as the survey questionnaire, the secondary data and the interview protocol) to have a significant content validity, culminating in the approval of the instruments for field work.
- **Criterion-related or concrete validity:** This is the instrumental validity which is a direct result of the operationalisation of constructs/concepts after rigorous testing based upon the premise that these same results can be extended to similar studies. This implies that the findings of this research from the survey questionnaire, secondary data and qualitative interviews should produce identical outcomes, and if instruments used by other researchers are also employed, the same results shall be reproduced.

- **Construct validity:** This is the degree that empirical testing precisely measures a construct/concept. Thus, it is the mantle of validity upon which other evidences of validity rests. In order to safeguard the construct validity of this study, the outcome of the literature study entailed that the researcher carefully operationalised all of the constructs of interest, based on extant theory, and the proximation of the measurement indicators from previous research in this field of study. Similarly, the research questions were drawn from existing entrepreneurship and capital market theories, as well as SME development literature studies on South Africa. Furthermore, the following considerations and procedural approaches added to the overall validity of the measurement instrument of the current study: The survey participant's information sheet provided the respondents with easy-to-follow directions and instructions for completing the questionnaire. Also, all indirect and ambiguous questions were removed during the ethical clearance application, and after the pilot phase of the study was completed. More so, the language used in this study was simple but professional, while complex sentences were eliminated for clarity purpose. As attached in the appendix section of this thesis, standard survey administration procedures were followed throughout the entire research gathering process. Furthermore, the measurement process for all constructs were transparent and consistent, devoid of any technical jargons the respondents might not understand.

Following Messick (1995) unified theory of construct validity, challenges such as consequential issues, content, the substantive foundation, structural interrelationships, external validity characteristics and the generalisability of the study were all considered during the development of the instruments and the analysis of empirical data in this thesis. Similarly, the two forms of construct validity were empirically tested, i.e. convergent and discriminant validity. This ensured that constructs that are supposed to be related were related (i.e. convergent validity), and also, it ensured that constructs that are assumed to be unrelated were indeed unrelated (i.e. discriminant or divergent validity). In this research, the threshold for discriminant validity or divergent validity was set at  $< 0.85$  following previous studies (Fornell and Larcker, 1981; Henseler, Ringle and Sarstedt, 2014; Voorhees, Brady, Calantone and Ramirez, 2015). Without mincing words, the validity of a research, the reliability of its findings/conclusions, and the application of triangulation in data collection/analysis contributes to both the validity and reliability of a study. Therefore, a valid research should be supported by empirical evidences, acceptable findings/conclusions, peer-review and also must be convincing enough to be cited by other researchers. And most all, should contribute to new and existing knowledge, as well as relevant disciplines through the application of systematic guidelines/methodology for rigorous research. According to Creswell (2015) validity plays a dominant role in empirical and quantitative

studies because it is an influential tool that can be used to ascertain the accuracy of a study's findings/conclusions. As a mixed research study, this thesis therefore uses triangulations as a means to placate the methodological bias of researchers, thus in the process overcoming the single method-bias. Lakew (2015) is of the opinion that QUAN and QUAL validity originates from the relevance, diligence and effectiveness which emanates from methodological correctness and precise construct measurements in any study. This notion was applied throughout this research study.

### **5.17.2 RIGOUR OF THE QUALITATIVE PHASE**

Qualitative research is viewed by interpretivists as authentic research based on the theoretical foundations that reality is socially constructed through dialog between the researcher and the interviewee in their natural setting. However, the use of subjective judgement implies that the accuracy of qualitative studies can be questioned. Therefore, it is the responsibility of a qualitative researcher to ensure the trustworthiness and authenticity of this type of research. According to Lakew (2015) cogent reasons must be provided by the researcher for readers and research participants to understand the motivations behind the use of this research model and why individual participants were selected for the study. Also, the honest opinions of the interviewees should be codified into themes that can be analysed. Hence, a qualitative research should be credible, dependable, conformable, transferable, authentic and reflexive.

✚ **Credibility:** According to Korstjens and Moser (2018) credibility is the level of confidence that the research findings represent plausible information generated from the participants' expressions and the researcher's correct interpretations of them. It is commensurate to internal validity in QAUN studies. In order to ensure the credibility of the data that was gathered from the qualitative phase of this study, the semi-structured interview protocol was properly coded. In fact, because the researcher wanted to reduce the level of subjectivity in this study, each question was developed uniquely, such that there is no vague adaptation of measurement protocols. Also, the interview questions were framed in semi-structured way with open-ended questions to allow flexibility in gathering data that cannot be addressed by the survey questionnaire. This ensures that the final outcome of the qualitative phase of this study would reinforce the findings of the quantitative phase of this research through the use of credible, believable, qualitative and accurate data that guarantees the level of confidence, uniqueness and truthfulness of its findings. Using standardised methodological procedures, the credibility of the qualitative phase of the current study was assured via the following:

- (a) Time: Sufficient contact exposure with the participants was vital during the interview session. Using a prolonged time period is known to be

detrimental to the outcome of a study due to the amplified the risk of false information that arises from recall error. Consequently, the researcher had to brace up with the fact that the interview sessions had to be brief.

- (b) Angles: Holistic viewpoints and perspectives were used to gather data from the interviewee's natural environment and social setting.
- (c) Triangulation: Directive probing and non-directive probing techniques was used during the interview sessions to get broader, more specific, more personal, richer and clearer information about the topic. Furthermore, triangulation was used to ask the interviewees questions in a flexible sequential order (i.e. in no particular order), in order to collect and integrate these data from various sources via multiple methods to answer the same questions. The essence of this step was to offer a rounded understanding of the phenomenon being studied.
- (d) Member checks: This involves the sharing of the research data, analysis, interpretations, findings and conclusions with the participants. The researcher intimated the interviewees that they would be sent the draft data, so as to clarify what their intentions were, consistent with their beliefs and sensitivities of the context being studied, correct errors, and to make available additional information if necessary. Based on the researcher's experience on the limitations of respondent validation, the interview participants were furnished with the vital data and findings, so as to ascertain the validity of the findings through factual accuracy checks. This assisted in enhancing the researcher's understandings of the phenomenon being studied.
- (e) Peer debriefing: The researcher contacted senior and knowledgeable academics/professionals in this field of study to appraise and critique the research and data analysis findings/conclusions.

✚ Dependability: In qualitative research, the concept of dependability can be parsed with reliability, just like credibility seem more related to validity in QUAN studies. It deals with the stability and consistency of the findings/conclusions over time in this study. According to Korstjens and Moser (2018) dependability is the use of an audit trail or peer review data to support participants' evaluation of the findings, interpretation, conclusion and recommendations of the study. The detailed nature of the semi-structured interview protocol that was used in the qualitative phase of this study safeguards the dependability of the dataset. Over time, the stability of this qualitative data can therefore be applied in various contexts and conditions pertaining to the phenomenon under study. Consequently, based on the decision points made throughout this qualitative



research process, the concept of dependability was assured through the implementation of the following procedures:

- (1) By clearly depicting and documenting all the procedures for data collection and analysis.
- (2) Ensuring that data enumeration and collection occurred within a relatively short period of time.
- (3) Adapting the research method based on the new normal during a global pandemic necessitated the use of Zoom videoconferencing for conducting interviews. Also, the audit trail was used to generate reliable field notes to peer-reviewers before data analysis.
- (4) The use of a flexible sequential order case study protocol and interview checklists assisted the researcher to maintain consistency in data gathering from all the interviewees.
- (5) An information database was created to store the data, which is kept by my supervisor in a password-protected computer for future reference and replication, when necessary.
- (6) Despite the confidentiality of vital participants' data, the researcher ensured that the documentation of the research process was carried out transparently.
- (7) All the interviewees were selected based on their work and educational experience as CEOs, directors and TMT members of the JSE's AltX listed firms in South Africa.
- (8) The researcher maintained a professional relationship with the interviewees, which was clearly defined and managed.

🚧 Confirmability: According to Lakew (2015) confirmability is the degree that the findings/conclusions of a study can be confirmed/verified by other researchers. This is done through the provision of an objective basis to replicate earlier works, and for other researchers to be able to do the same independently without bias. More so, it indicates that findings of a study are arrived at via the analysis of data, but not the figments of the researcher's imagination. In this study, all of the interviewees had high-level experience and expertise about the operations of listed SMEs on the JSE's AltX, hence, there is a tendency that their responses would be both consistent and reinforce the comments of other respondents, *ceteris paribus*. This ensures confirmability and objectivity, because definitely there would be a fair distribution and agreement between them and other peer-reviewers that reviewed the findings of this study for accuracy and meaning. The neutrality of the data and the ability of the

researcher to triangulate available data is of considerable importance here. Likewise, deviant cases that contradict with either the emerging or thematic analysis were strictly monitored/managed in an appropriate, fair and transparent manner.

✚ Transferability: This is the generalisability of a study's findings to related themes and/or context (Yin, 2014). It is comparable to external validity in QUAN studies. For this to be applicable in a study, the researcher must present a thick description of the phenomenon under study, in a pragmatic but acceptable format. The case study approach employed in this study provided an in-depth and multi-faceted exploration of complex issues concerning the impact that firm listing has on the JSE's AltX listed companies. This ensured that the outcome of this research provided an in-depth and thick understanding of the phenomenon that is being studied. Hence, the findings of this study can be generally transferred to other contexts such as listed companies of other jurisdiction or countries. Based on this premise, it is expected that the proposed model of this study would provide the least cost method to improve listed SME's performance.

Likewise, the interviewees were adequately described based on their environmental setting, as applicable to the context of the current study. By offering a thick multi-layered insight at several levels about a variety of topics, users of the research findings/conclusion would be able to gain a depth of understanding about the phenomenon being described, thus, permitting the transferability of findings, *ceteris paribus*. More so, relevant details about the size, sample and characteristics of firms that are listed on the JSE's AltX were provided in a transparent form. Therefore, the reader and/or user of this information can safely and easily transfer or extend the findings of this study to other settings. Also, since the interviewees were all the JSE's AltX firm's listed CEOs, directors and TMT members, they can provide shrewd views that shed more light on the phenomenon under study, due to the fact that they have sufficient knowledge in this critical area.

✚ Authenticity: According to Lincoln and Guba (1986) the term authenticity was coined in order to address the additional intrinsic naturalistic criteria that cannot be found in trustworthiness from a positivist paradigm or methodology. Fundamental issues such as representation, power, multiple values, empowerment, pluralism and accountability which deals with the influence of context are taken into consideration. Hence, this term does not have a related equivalent in QAUN studies. Lakew (2015) is of the view that it reassures readers and users of research that the conduct and evaluation of a research study is actually genuine and credible in relation to the wider political and social implications of the study. Authenticity therefore involves addressing concerns about research worthwhileness and impact on members of the entire population

ecosystem, their culture and community as a whole. But to achieve authenticity a qualitative researcher needs to consider fairness, ontological authenticity, tactical authenticity, catalytic authenticity and educative authenticity. Consequently, in this study respondents were drawn from the sample population after securing their informed consent in a transparent manner following ethical considerations. While the thesis draft report will be sent to all the respondents and peer-reviewers for review purposes. Lastly, in case of conflicts or disagreement, a mechanism will be set up to resolve them amicably thereafter.

✚ Reflexivity: According to Korstjens and Moser (2018) every qualitative researcher should examine his/her own conceptual lens through critical self-reflection, explicit and implicit assumptions, personal biases, preferences, preconceptions and values, since these factors can influence the research decisions taken by the researcher in all phases of a qualitative study. After, ascertaining the positioning of the researcher, it became essential that a neutral stance should be maintained throughout this study, in order to boost its trustworthiness. Also, in this study, pragmatism research philosophy was employed by the researcher, consequently, the researcher has an open mind to both QUAN and QUAL techniques, and therefore relied on triangulation to bring out insightful findings/conclusions. Furthermore, the qualitative case study phase of this research used reflexivity because it is a convincing standard for evincing rigour for data gathering and analysis. Thus, the researcher employed this technique, so as to guarantee the trustworthiness of the dataset, while confirming its credibility, transferability, dependability and confirmability simultaneously.

## **5.18 DATA ANALYSIS**

According to Xia and Gong (2015) data analysis comprises of several multi-faceted techniques that are used to describe, inspect, cleanse, visualise, transform, operationalise and model data, so as to discover insights in new and existing information scientifically, as well as support evidence-based decision-making. In this research, data analysis was used as a tool to generate fresh insights in the under-researched area of the JSE's AltX impact on listed firm's operations and entrepreneurship levels in South Africa. Consequently, this would play a fundamental role in the decision-making process of industry practitioners and policy makers, as well as assist these businesses to operate more efficiently and effectively in the long run. Lakew (2015) is of the view that the use of statistical data analysis for performing various econometric operations can facilitate the discovery of new ideas, patterns, relationships, coherent themes, causality and meaningful categories which yields a better understanding of either a research problem or phenomenon. Thus, this motivated the researcher to use various analytical techniques from a pragmatist

lens to uncover the impact that listing on the JSE's AltX has on registered SMEs and the entrepreneurship level in South Africa.

### **5.18.1 QUANTITATIVE DATA ANALYSIS**

In this study, the researcher used IBM SPSS Statistics for Windows version 27 to conduct the quantitative data analysis. However, SmartPLS version 3 was used to carry out the validity and reliability factor analysis, since this study's dataset was less than 200. Furthermore, the researcher used various descriptive statistic and inferential statistical methods to provide an elaborate analysis of the dataset. Also, the questionnaire data was imported into the SPSS dataview platform where all the survey items and econometric variables were coded, processed and analysed in order to seek reliable answers to the research questions (i.e. via the operationalised constructs that were used to test this study's hypothesis). Likewise, the secondary data that was gathered for this study was also imported into the SPSS dataview platform, coded, transformed, processed and analysed, so as to test and reinforce the findings from the questionnaire survey. Hence, the following are the quantitative data analyses procedures that were meticulously implemented in this study:

a) Data coding: Measurement tools was used to assign a numerical value to both the survey questionnaire responses, as well as the secondary data, in order to facilitate data capture and processing. Notably, the response categories for the Likert scale answers to questions were pre-coded on the survey questionnaire form. Also, the secondary data variables were re-coded in order to fit seamlessly within the SPSS environment.

b) Importation of data: Data was imported into the SPSS environment from a Microsoft Excel file to enable data entry/processing.

c) Editing: Where necessary, some of the variables were edited, in order to check/account for errors, inconsistencies and non-response/missing variables.

d) Data preparation, screening and transformation: The descriptive checks were carried out during the data preparation stage for analysis. The researcher checked for outliers, frequencies percentiles, central tendency, dispersion and distribution, as well as response categories, and were necessary either log or automatic transformations was carried out in SPSS to correct any anomaly in the dataset.

e) Validity and reliability testing: Reliability tests such as CFA, Cronbach alpha, rho\_A, AVE and collinearity statistics (i.e. VIF) tests, as well as discriminant validity tests such as Fornell-Larcker Criterion was carried out by the researcher, in order to boost the generalisability of the findings and conclusions of this study.

f) Normality plots and testing: The researcher conducted a test for normality because only normality plots did constitute enough evidence of normality in the datasets. This resulted in a not normally distributed Likert scale and secondary datasets. Then, following standard procedures, it led to non-parametric (instead of parametric) testing. As a rule, ordinal regression is supposed to be used to test this type of dataset (instead of linear regression). While, Spearman Rank Correlation (instead of Pearson correlation) was used to ascertain the relationship between the primary and secondary data for this study.

g) Descriptive statistics: It was used to introduce and describe the entire nature of the data. This showed among other things the frequency distribution, mean, median, mode and the standard deviation of the dataset. Based on standard procedure, this step was necessary before conducting the core analysis of the data.

h) Multi-level Modelling (MLM)/mixed effects model: Due to the nested nature of the data produced by the mixed method design which was implemented in this study, and based on the researcher's experience, it was considered important to use multi-level modelling (MLM) instead of using ordinal regression. This is because spurious regressions might limit the applicability of the findings of this study. That said, one good thing about MLM is that the ensuing statistical models can vary at more than one level, as well as show fixed and random effects that explore the interaction between and within groups or levels.

i) Statistical data processing using IBM SPSS Statistics for windows version 27 software package.

j) Data presentation and description via graphs and tables: A detailed presentation of the MLM results was carried out, so as to provide a vivid understanding of the phenomenon under study.

k) Analysis, interpretation and discussion of results: After a thorough analysis and interpretation was carried out, the findings of the study were put forward. This led to the development of a model by the researcher in the concluding section of this thesis.

#### **5.18.1.1 CHOOSING A SUITABLE STATISTICAL SOFTWARE**

The IBM SPSS Statistics 27 package was chosen over other statistical software packages because it has a more powerful and robust framework that can analyse clusters of information quickly with enhancements in accuracy. Also, it can be used to appraise data with ad hoc analysis, assumption validation, hypothesis testing, as well as historical performance analysis, trend forecasting and predictive analytics. Furthermore, it has a powerful tool for data

visualisation, bootstrapping and supports Microsoft Windows 64-bit operating system without deprecations for the researchers' HP 625 machine. Unlike, IBM SPSS Statistics 27 other statistical packages have limited applications to process a MLM dataset. For instance, Stata assumes that the MLM data is normally distributed, symmetric or curved, which is not true here. However, IBM SPSS Statistics 27 has treatment for both parametric or non-parametric testing (Heck, Thomas and Tabate, 2014; IBM, 2020).

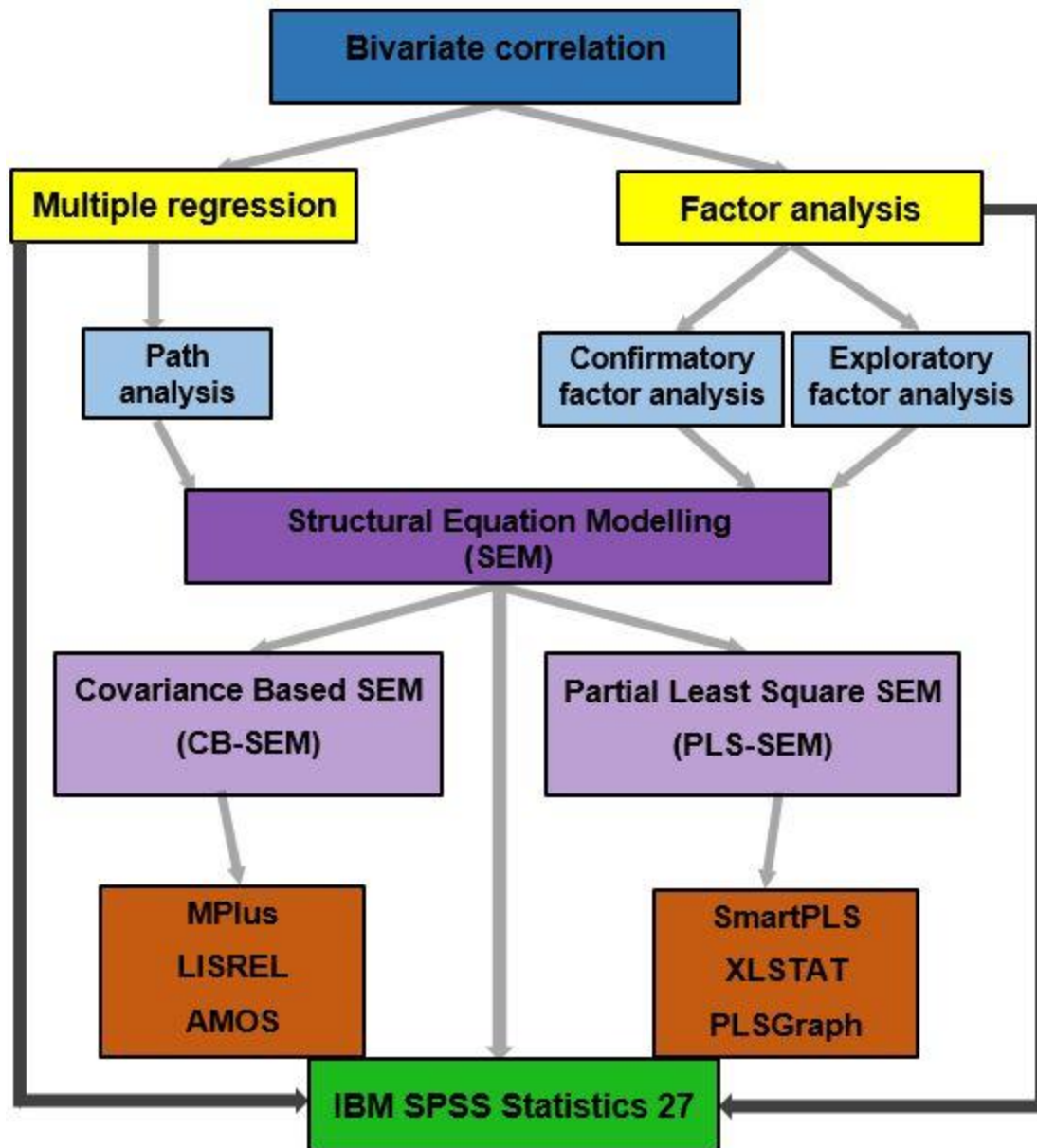
Going further, when it comes to validity and reliability testing, although some the vital computations can be carried out by IBM SPSS Statistics 27, its output is not detailed enough. This necessitated the use of SmartPLS 3 statistical software package for validity and reliability testing. Firstly, it must be understood that bivariate correlation can implemented through factor analysis and multiple regression. Nevertheless, factor analysis can be executed using confirmatory factor testing and exploratory factor analysis, while multiple regression can be implemented through path analysis. Interestingly, path analysis is used to connect multi-item scales via latent constructs, which defines the relationship that exist between the macroeconomic variables in a model. In structural equation modelling (SEM), the measurement model is a factor analysis equivalent that can be executed so as to understand how items measure a particular construct (Garson, 2016; Hair, Hult, Ringle and Sarstedt, 2017; McNeish, 2017). However, the handling of multiple dependent constructs in SEM can be implemented in two (2) ways using covariance based (CB) SEM and partial least square (PLS) SEM. As earlier stated, CB-SEM also assumes that there is normality of data distribution, homoscedasticity, large sample size etcetera which is not true here. This leads to a striking differential, because CB-SEM is only used to test theory, while the PLS-SEM path modelling can be used to develop both a theory and also make predictions – which is manifestly possible due to the application of neural networks to make predictions using artificial intelligence, big data and/or data science (Chin, 1998).

It became imperative to use SmartPLS to test for the validity and reliability of this study because it is variance based like MLM. Also, since its predictor specification is non-parametric (just like SPSS), its results are more consistent and reliable as the indicators and sample size increases, which makes it optimal for prediction accuracy. Moreover, it can handle a minimum of observations<sup>12</sup> in the range between 19 to 100 cases – which is different from what most statistical packages can handle (Garson, 2016; Hair et al., 2017). Likewise, SmartPLS explicitly recognise measurement errors (unlike in the AMOS environment where errors need to be represented) and it does not assume the

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<sup>12</sup> Although the period of coverage for this study was 2003-2016, the time period for the secondary datasets was adjusted to cover a minimum of 19 cases, given that the JSE's AltX is in its eighteenth (18<sup>th</sup>) year of operation in South Africa.

normality of data distribution (unlike in Stata where data is assumed to be normally distributed). Also, it assumes that all measured variance (including error) is absolutely vital for explanation and/or prediction of casual relationships. These differences are thus depicted below in Figure 5.5.



**Figure 5.5: Statistical software package (Source: Authors' compilation)**

During the data screening and transformation stage of this thesis, the researcher observed that although the survey/secondary data dependent variables showed attributes of normality using Shapiro-Wilk criterion. But further probe indicated that the test of proportional odds was not supported, same with the goodness of fit, despite the fact that the omnibus test showed that the model was well fitted, the result for two dependent variables were not significant. Since SEM is suitable for non-parametric testing during factor

analysis, SmartPLS was chosen by the researcher, due to its elaborate reporting framework for presenting non-parametric data, most especially because this study uses a mixed method design (Garson, 2016; Hair et al., 2017). Equally, it became practicable to conduct path modelling for theory development, while using the emergent theory to make predictions (for example, the validity and reliability testing of the datasets which was used in this study became more plausibly effective).

### 5.18.1.2 VALIDITY AND RELIABILITY OF THE DATASET

Due to the fact that there are different types of validity and reliability, the onus to accurately measure its various forms rests on the researcher. Figure 5.6 shows the composite reliability (i.e. internal consistency) for the survey questions. This is based on the factor loadings estimate of all items, which is fitted in a confirmatory factor analysis (CFA) model (Garson, 2016; Hair et al., 2017; McNeish, 2017).

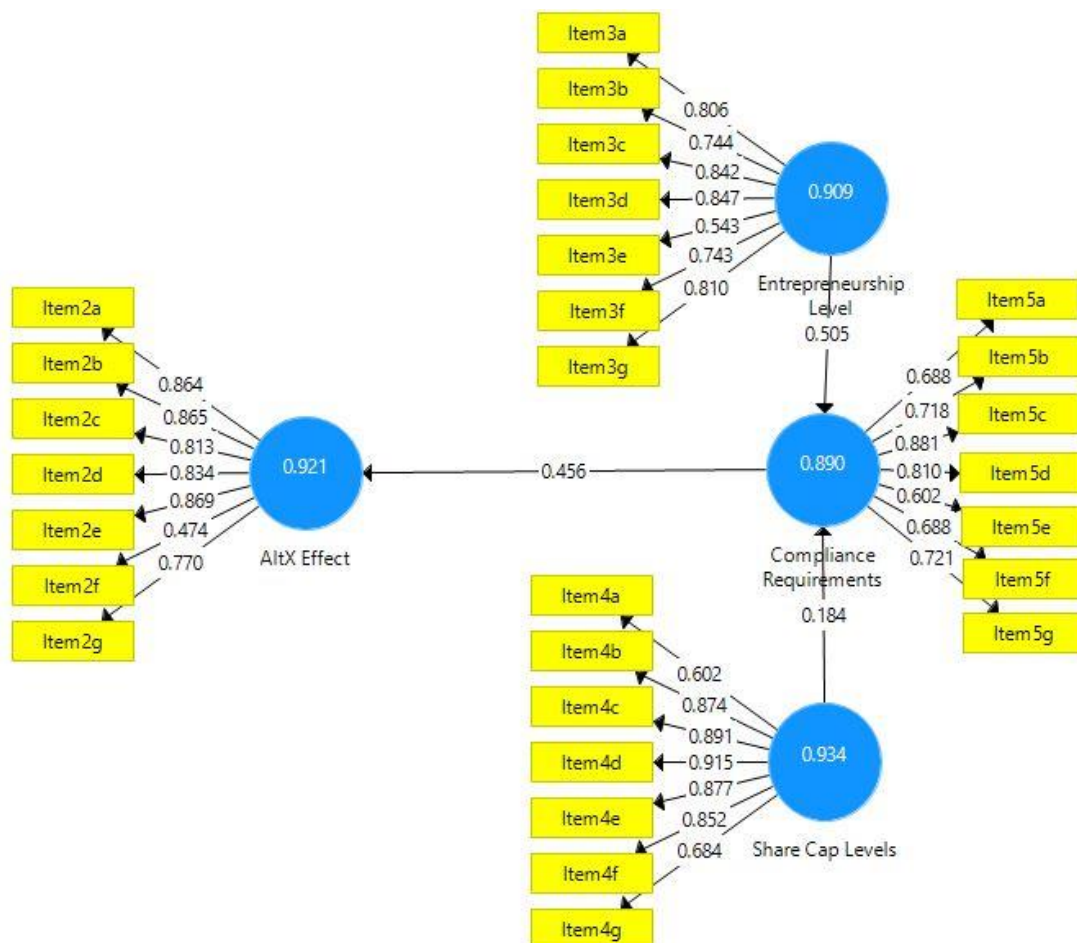


Figure 5.6: Composite reliability for the survey questionnaire (Source: Authors' compilation)



All the outer weights/loadings comprising of the entire items in the survey questionnaire were high and above the cut-off of 0.5 except for *item2f* which had a loading of 0.474 (approximately 0.5) with respect to the question “Listing aided the development of a good record keeping culture in the company that complies with existing regulation”. This was ignored because an attempt to exclude it led to a reduction of all the item loadings, and also it did not impact on the validity/reliability of this study (Hair et al., 2017). Furthermore, the constructs internal consistencies had a composite reliability of 0.921, 0.909, 0.890 and 0.934 for the *AltX effect*, *Entrepreneurship Level*, *Compliance Requirements* and *Share Cap Levels* variable indicators respectively. There is indeed a display of convergent validity, and hence reliability in the reflective model. Moreover, all the path coefficients of the inner model were positive. However, the weakest path weight was expectedly between *Compliance Requirements* and *Share Cap Levels* with 1/3 to 2/3 of the weights of other standardised path weights.

**Table 5.1: Validity and reliability tests for the questionnaire survey**

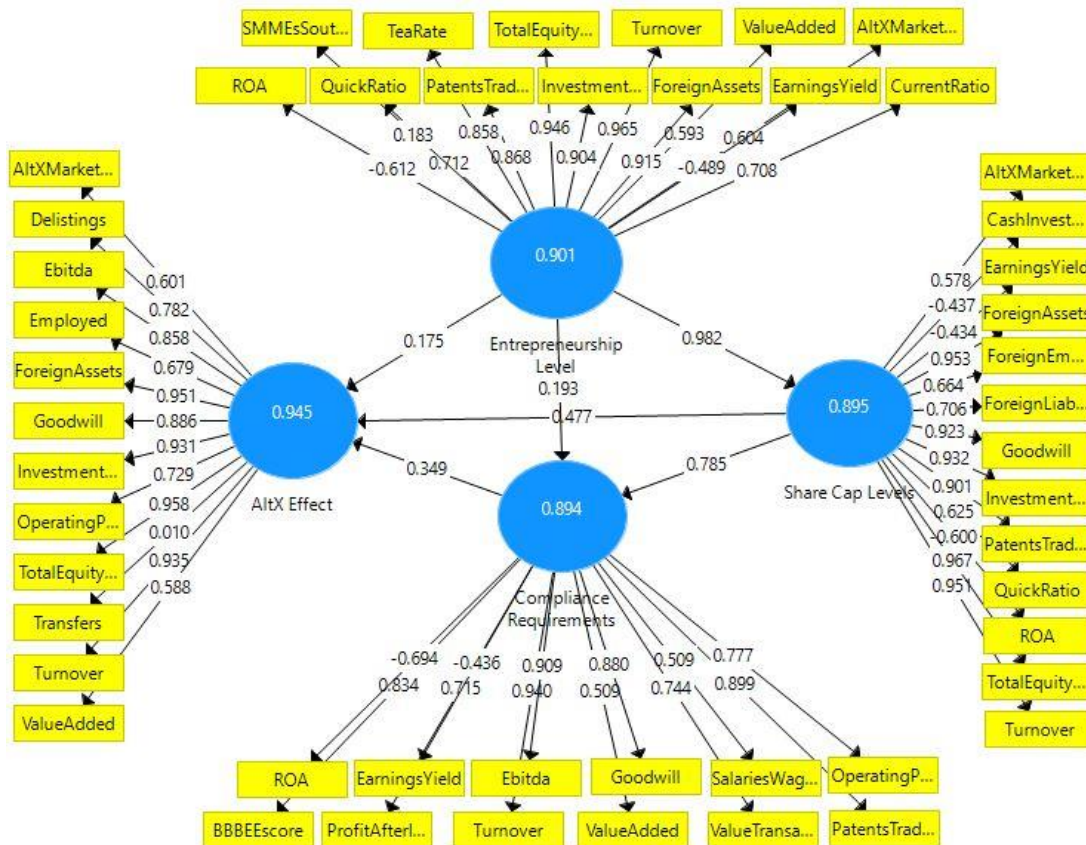
	Cronbach’s $\alpha$	rho_A	CR	AVE	DV	VIF
AltX Effect	0.900	0.933	0.921	0.632	0.795	3.115
Entrepreneurship Levels	0.882	0.909	0.909	0.591	0.592	2.072
Share Cap Levels	0.919	0.973	0.934	0.675	0.648	3.106
Compliance Requirements	0.859	0.881	0.890	0.540	0.456	2.552

*Cronbach’s  $\alpha$*  Cronbach’s Alpha, *rho\_A* Spearman’s Rank Correlation, *CR* Composite Reliability, *AVE* Average Variance Extracted, *DV* Discriminant Validity, *VIF* Variance Inflation Factor.

**Source: Authors’ compilation**

From Table 5.1 it can be seen that the Cronbach Alpha for the constructs were quite high at 0.9 (1 d.p.). This indicates that all the constructs have an excellent measure of internal consistency given the stipulated cut-off of 0.7 from past studies (Nunnally, 1978; Blankson and Cheng, 2005; Lance, Butts and Michels, 2006; Mahmoud, 2011; McNeish, 2017). Likewise, the rho\_A test reveals that all the variable constructs exhibited high Spearman’s rank correlation at 0.9 (1 d.p.) which is above the recommended threshold of 0.7 (Garson, 2016). Similarly, a test of convergent validity and a standardised measure of composite reliability was carried out, which was above the endorsed limit of 0.7 (Hair et al., 2017). Furthermore, the AVE test exceeded the 0.5 threshold, which shows high adequacy amongst all the variables. Also, it implied that factors described more than half of the variance of their corresponding indicators resulting in both convergent and divergent validity (Chin, 1998). In addition, the discriminant validity that was estimated based on the Fornell–Larcker criterion (Fornell and Larcker, 1981) showed higher correlation with other latent variables, just like its cross-loadings and the Heterotrait-Monotrait Ratio – HTMT (not reported), and that the four scales measure theoretically different

constructs (Garson, 2016). Lastly, based on the rule of thumb of 5.0 cut-off 1 d.p. (Garson, 2016; Hair et al., 2017), there is no problematic multicollinearity in the variable constructs that can inflate standard errors or make significance tests unreliable (average of construct variables was presented above).



**Figure 5.7: Composite reliability for the secondary data (Source: Authors' compilation)**

Figure 5.7 above shows the composite reliability test scores for the secondary data in this study. All the outer weights/loadings comprising of the entire latent variables in the secondary data were high and above the cut-off of 0.5 except for *Transfers* and *SMMESouthAfrica* variables which had a loading of 0.010 and 0.183. This was ignored because an attempt to exclude it led to a reduction of all the latent variable loadings, and also, they did not impact on the validity/reliability of this study (Hair et al., 2017). Negative loadings were also observed in some of the latent variables. Furthermore, the constructs internal consistencies had a composite reliability of 0.945, 0.901, 0.894 and 0.895 for the *AltX effect*, *Entrepreneurship Level*, *Compliance Requirements* and *Share Cap Levels* variable indicators respectively. The constructs exhibited traits of convergent validity, and hence reliability in the model. Moreover, all the path coefficients of the inner model were positive. However, the strongest path weights were between *Entrepreneurship Level* and *Share Cap Levels* (0.982), *Share Cap Levels* and *Compliance Requirements* (0.785), and *AltX Effect* and *Share Cap Levels* with 0.477 standardised path weight. While, the weakest

path weights were between *AltX Effect* and *Entrepreneurship Level* (0.175), *Entrepreneurship Level* and *Compliance Requirements* (0.193), and *AltX Effect* and *Compliance Requirements* (0.349).

**Table 5.2: Validity and reliability tests for the secondary data**

	Cronbach’s $\alpha$	rho_A	CR	AVE
AltX Effect	0.929	0.963	0.945	0.616
Entrepreneurship Levels	0.832	0.960	0.901	0.565
Share Cap Levels	0.785	0.960	0.895	0.591
Compliance Requirements	0.809	0.945	0.894	0.571

*Cronbach’s  $\alpha$*  Cronbach’s Alpha, *rho\_A* Spearman’s Rank Correlation, *CR* Composite Reliability, *AVE* Average Variance Extracted.

**Source: Authors’ compilation**

Table 5.2 above shows the validity and reliability test statistics for the secondary data for this study. The Cronbach Alpha for the constructs hovered between 0.9 – 0.8 (1 d.p.), which is good. This indicates that all the constructs have a high measure of internal consistency given the cut-off of 0.7 from previous studies (Nunnally, 1978; Mahmoud, 2011; McNeish, 2017). Likewise, the rho\_A test reveals that all the variable constructs exhibited high Spearman’s rank correlation between 0.9 – 1.0 (1 d.p.) which is above the recommended threshold of 0.7 (Garson, 2016). Similarly, a test of convergent validity and a standardised measure of composite reliability was carried out, which was above the endorsed limit of 0.7 (Hair et al., 2017). Furthermore, the AVE test exceeded the 0.5 threshold, which shows high adequacy amongst all the variables. Also, it implied that factors described more than half of the variance of their corresponding indicators resulting in both convergent and divergent validity (Chin, 1998).

Due to poor internal consistency and multicollinearity concerns, 10 out of the 36 indicator variables (*AltXcompanies*, *Dividend Yield*, *Leverage Factor*, *Retention Rate*, *ROE* – return on equity, *ROCE* – return on capital employed, *Price/EBITDA* – earnings before interest, tax, depreciation and amortisation, *Operating Profit/Employee*, *Bee Share Accumulative Profits B/S*, and *Tax Payable*) were dropped for not meeting the recommended threshold figures (Nunnally, 1978; Garson, 2016; Hair et al., 2017). Past studies have pointed out that due to nature of SMEs and the young age of existence of the JSE’s AltX (2003-present) there may exist potential multicollinearity issues in the dataset given the fluidity that comes with high exposure to risks, listings, suspensions, delistings and promotions to the Main Board (Egu, Chiloane-Tsoka and Dhlamini, 2016). Similarly, this issue can cause conflicts such as over inflated standard errors, unreliable significance tests, as well as Type I and II errors, which has been experienced in the GEM datasets (Bosma and Kelley, 2019; Bosma et al., 2020). As stated in the introductory part of this thesis, there

exist inconsistencies in the findings of previous studies which warranted this investigation to be carried out via a mixed methods research design. Reason for this is that the myriad of problems linked with a single-level analysis of statistical data might also allow the variation of both slopes and intercepts across different sectors and locations (IBM, 2020). In order to ameliorate the effects of these concomitant issues, a mixed effects model was used to analyse the ensuing dataset, taking cognisance of within and between effects in the data. This is because in MLM, the data is permitted to exhibit correlated and nonconstant variability. Also, this can be traced to the fact that the mixed effects model ensures the flexibility of modelling by tolerating the presence of variances and covariances concurrently, as well as revealing any evidence of clustering in the dataset.

### **5.18.1.3 THE MULTI-LEVEL MODEL**

According to Steele (2008) multilevel or hierarchical structures have become very popular across social, management sciences, medical sciences, biological sciences and pharmaceuticals as a gold standard for analysing clustered data. MLM have also been referred to as hierarchical linear models (HLM), random effects models, mixed models, mixed effects models and variance components models because the nested structure of models (i.e. levels) is of significant value here. Undoubtedly, this gives rise to dependencies that only a MLM can explain. Particularly, the assumption that residuals are independent in a least square regression might not hold if there is evidence of significant clustering in dependent residuals. This leads to correlation between residuals and a deflation in the standard errors, while simultaneously increasing the probability of the researcher committing a Type I error (Pituch and Stevens, 2016; Osborne, 2017). For instance, the variations between location and sector can be considered an area of interest by the researcher.

Unsurprisingly, many novice researchers have ignored the implications of clustering to their own peril (Heck et al., 2014), especially, when investigators are tasked with a duty to study the impact that regulation, gender or ethnicity has on a phenomenon – in a heterogenous population like South Africa. Thus, if the impact of clustering is not factored into statistical analysis the standard errors of the regression coefficients would be greatly underestimated, thereby narrowing confidence intervals and also reducing the  $p$ -values of econometric estimates (Pituch and Stevens, 2016; Osborne, 2017). Obviously, this leads to spurious correlations that are not causative in nature, hence causing over or under-estimation of the real effects of a phenomenon by pure chance. MLM therefore enables researchers to efficiently determine the nature of these between-group variabilities, as well as identify the sources and effects of within-group or group-level characteristics on discrete outcomes (Steele, 2008). According to Torres-Reyna (2010) it is quite probable that simple/multiple linear

regression can be negatively impacted by sample problems, as well as the lack of validity or generalisability of the findings of such a study. In this study, a three-level MLM was implemented so that groups can be nested within supergroups/clusters culminating in a three-level hierarchy model which is fitted using top-notch econometric estimation techniques.

#### 5.18.1.3.1 STEPS TO DETERMINE CLUSTERING

Several factors might warrant the use of MLM. However, there are methodological steps that needs to be followed before conducting a MLM best linear unbiased predictions (BLUPs) of both the fixed and random effects which identifies the amount of variation that can be accrued to both the intercept and the estimated beta coefficient(s) of an econometric equation (Leckie, 2013). First, the researcher had to determine whether there was an evidence of clustering in the datasets, using the dependent variables as a metric. This is because clustering in the datasets can produce bias in parametric estimates and standard errors, which results to a conclusion that is based on incorrect inferences (Osborne, 2017). Secondly, the intraclass correlation coefficient (ICC) of the two competing models was tested to indicate which econometric model is a better fit. Lastly, the test of both level 2 and 3 variance components (i.e. the variance of the intercepts/means across both the level 2 and 3 units) was conducted in order to statistically determine the model that is a better fit.

#### 5.18.1.3.2 VARIABLE IDENTIFICATION FOR THE SURVEY DATA

Due to the voluminous dataset that was generated from the survey questionnaire, it became essential for the researcher to identify the variables that were used to collate the data without repeating them over and over again whenever they prop-up in the model equation (Creswell, 2015). Hence, the variables that were coded from the survey questionnaire are described below:

*AltXeffect* = Impact of firm listing on the JSE's AltX; *Item2a* = Registering on the lower bourse helped to improve my company performance; *Item2b* = Listing on the AltX facilitated the growth of the company's revenue base and enhanced the level of firm profitability; *Item2c* = Many stakeholders became more confident when transacting with our company; *Item2d* = Listing increased the level of media publicity and raised the profile of our organisation both locally and internationally; *Item2e* = Registering on the junior exchange helped to attract and retain skilled talent that can assist in achieving firm goals; *Item2f* = Listing aided the development of a good record keeping culture in the company that complies with existing regulation; *Item2g* = The combination of miscellaneous factors caused an improved performance of firm operations.

*EntreLevel* = Impact of firm listing on the level of entrepreneurship in South Africa; *Item3a* = An increase in the number of listings on the AltX have a net

positive impact on the level of entrepreneurship in South Africa; **Item3b** = SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa; **Item3c** = It enhances the efficiency and effectiveness of our company, hence improves firm competitiveness; **Item3d** = The AltX serves as an incubator for young high growth companies, and assists in the training of SME managers; **Item3e** = Registering on the junior exchange encourages entrepreneurial risk taking, and increases business confidence; **Item3f** = Firm listing motivates entrepreneurs by creating a high energy environment, where ideation thrives iteratively; **Item3g** = The combination of miscellaneous factors causes firm listing to impact on the level of entrepreneurship in South Africa.

**SCapLE** = Increased share capital levels influence on the expansion and performance of listed firms; **Item4a** = We used the initial public offering (IPO) of our company's share as a principal source of capital financing for the firm; **Item4b** = Listing on the AltX enabled our company to pool funds for expansionary purposes via acquisitions and joint ventures; **Item4c** = Corporate bonds and equities sold by our company on the AltX guaranteed the long term sustainability of our business; **Item4d** = The capital sourced from the AltX is being used to achieve our short-term goals such as product and market expansion; **Item4e** = Listing funds was used to diversify our market segments across various niches and increase our manufacturing volume; **Item4f** = Registering on the AltX enabled us to gain international exposure and has helped to consolidate our industry position; **Item4g** = A combination of miscellaneous factors triggered our share capital growth and led to improved performance/expansion.

**CompReq** = Impact of compliance requirements on the B-BBEE score performance of listed firms; **Item5a** = The implementation of good governance systems like the B-BBEE by listed firms makes them attractive to all stakeholders; **Item5b** = Listing on the AltX made us to secure a BEE enabler for the group, thus adding substantial value to the firm's proposition; **Item5c** = The mandatory compliance to the B-BBEE act enhanced our reputation, ratings and improved our performance; **Item5d** = Listing enabled firms to deliver community development engagement programmes that are environmentally sustainable; **Item5e** = Compliance ensures participation in all tendering processes, application for licences, permits and public sector procurement; **Item5f** = The impact of our compliance with the B-BBEE requirement was that we had access to tax incentives and financial grants; **Item5g** = A combination of miscellaneous factors instigated by compliance helped to improve our B-BBEE score performance.

### 5.18.1.3.3 CHECKING FOR CLUSTERING IN THE SURVEY DATA

The case processing summary for the survey questionnaire data reveals that the *AltXeffect*, *EntreLevel*, *SCapLE* and *CompReq* variables had  $N = 47$  valid cases representing 97.8 per cent of the total sample, and  $N = 1$  missing variable representing 2.1 per cent of the total sample. For the sample to be described as being parametric, a test of skewness and kurtosis was conducted with the expectation that normal distribution can be ascribed to the dataset if skewness and kurtosis lies between -1.96 to 1.96 (Leckie, 2013). After exploring the normality plots using the tests, it was observed that the statistic divided by the standard error for skewness and kurtosis was *AltXeffect* (-0.262 to 0.347), (-0.409 to 0.681); *EntreLevel* (-0.845 to 0.347), (0.991 to 0.6881); *SCapLE* (-0.465 to 0.347, -0.397 to 0.681); and *CompReq* (-0.277 to 0.347, -0.044 to 0.681) respectively. To check if the variables were normally distributed Shapiro-Wilk test of normality was implemented, since the survey questionnaire dataset was less than 100. The test which is supposed to be not significant (to show normality) was *AltXeffect* (0.552), *EntreLevel* (0.032), *SCapLE* (0.099), *CompReq* (0.764). The variable *EntreLevel* was therefore not normally distributed with skewness of -2.435. Likewise, the log transformed variables test analysis showed similar results. This informed the researchers' use of SEM to test for the validity and reliability of this study's dataset.

Furthermore, it became necessary to probe the four (4) hypotheses using a polytomous universal model (PLUM) ordinal regression procedure. Hypothesis 1 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (0.000) that was significant and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.626) and Nagelkerke (0.627) implies that 63 per cent of the dependent variable can be explained by the independent variables. Besides, *Item2a* (0.000, was significant), *Item2b* (0.000, was negatively significant), *Item2d* (0.029, was significant), and *Item2f* (0.031, was significant). Likewise, the test of parallel lines or proportional odds, as expected was not supported to be significant (1.000), since the location parameters (i.e. slope coefficients) were not the same across all response categories (with -2 log likelihood of 238.822,  $df = 7$ , and Chi Square of 47.176). Correspondingly, Hypothesis 2 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (0.000) that was significant and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.554) and Nagelkerke (0.556) implies that 56 per cent of the dependent variable can be explained by the independent variables. In addition, *Item3a* (0.006, was significant), *Item3b* (0.049, was significant), *Item3e* (0.003, was significant), and *Item3f* (0.017, was significant). Equally, the test of parallel lines or proportional odds, was

surprisingly significant (0.000), (with -2 log likelihood of 216.947,  $df = 7$ , and Chi Square of 38.722).

In addition, Hypothesis 3 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (0.000) that was significant and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.470) and Nagelkerke (0.472) implies that 47 per cent of the dependent variable can be explained by the independent variables. Besides, **Item4b** (0.027, was significant), **Item4c** (0.031, was negatively significant), and **Item4f** (0.008, was significant). Likewise, the test of parallel lines or proportional odds, was unexpectedly significant (0.000), (with -2 log likelihood of 237.243,  $df = 7$ , and Chi Square of 29.840). Similarly, Hypothesis 4 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (0.000) that was significant and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.543) and Nagelkerke (0.545) implies that 54 per cent of the dependent variable can be explained by the independent variables. Also, only **Item5g** (0.023, was significant). Likewise, the test of parallel lines or proportional odds, was unexpectedly significant (0.000), (with -2 log likelihood of 241.817,  $df = 7$ , and Chi Square of 37.625). Consequently, the discrepancies in the goodness of fit statistics for all the dependent variables, as well as the significance of the test of parallel lines for Hypothesis 2, 3 and 4 indicated that the dataset exhibited the characteristics of a not normally distributed data. This meant that only non-parametric testing methods was suitable for this study, warranting the design of a MLM equation that can take care of concerns about clustering which were raised earlier in the introductory part of this section.

#### 5.18.1.3.4 VARIABLE IDENTIFICATION FOR THE SECONDARY DATA

Due to the voluminous nature of the secondary dataset that were generated in this study, it became vital for the researcher to identify the variables that were used in the econometric estimation procedure without repeating them each time they appear in the model equation (Osborne, 2017). Thus, the variables that were elicited from these databases are coded with corresponding descriptions below:

**LogJSEAltX** = The JSE's AltX logarithm value (which is a product of Total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies); **LogAltXMarketcap** = Total market capitalisation of the JSE's AltX logarithm value; **LogTurnover** = Turnover or total revenue of the JSE's AltX logarithm value; **LogOperatingProfit/Loss** = Operating profit/loss of the JSE's AltX logarithm value; **Delistings** = Delistings from the JSE's AltX; **Transfers** = Transfers to the JSE Main Board; **LogGoodwill** = Goodwill of the JSE's AltX logarithm value; **LogInvestmentsLoans** = Investments and



loans of the JSE's AltX logarithm value; **LogForeignAssets** = Foreign assets of the JSE's AltX logarithm value; **LogValueAdded** = Value added of the JSE's AltX logarithm value; **LogEmployed** = Total number of persons employed by the JSE's AltX logarithm value; **LogEbitda** = Earnings before interest, tax, depreciation and amortization of the JSE's AltX logarithm value; **LogTotalEquityLiabilities** = Total equity and liabilities of the JSE's AltX logarithm value; **LogSMMEsSouthAfrica** = Total number of SMMEs in South Africa logarithm value; **LogCurrentRatio** = Current ratio of the JSE's AltX listed companies logarithm value; **LogEarningsYield** = Earnings yield of the JSE's AltX listed companies logarithm value; **LogQuickRatio** = Quick ratio of the JSE's AltX listed companies logarithm value; **LogROA** = Return on assets of the JSE's AltX listed companies logarithm value; **LogPatentsTrademarks** = Patents and trademarks of the JSE's AltX logarithm value; **LogTeaRate** = Total entrepreneurial activity rate of South Africa's logarithm value; **LogCashInvestmentActivities** = Cash from investment activities of the JSE's AltX listed firms logarithm value; **LogForeignLiabilities** = Foreign liabilities of the JSE's AltX listed companies logarithm value; **LogForeignEmployees** = Foreign employees of the JSE's AltX listed firms logarithm value; **LogBBBEEScorecomposite** = B-BBEE composite score of the JSE's AltX listed firms' logarithm value (which is the B-BBEE Recognition Level divided by B-BBEE Status Score rating); **LogProfitAfterInterestTax** = Profit after interest and tax of the JSE's AltX listed companies logarithm value; **LogSalariesWages** = Salaries and wages of the JSE's AltX listed companies logarithm value; **LogValueTransactions** = Total value of transactions of the JSE's AltX listed firms logarithm value.

#### 5.18.1.3.5 CHECKING FOR CLUSTERING IN THE SECONDARY DATA

The case processing summary for the secondary data shows that the **JSEAltX** and **BBBEEScorecomposite** variables had  $N = 17^{13}$  valid cases representing 100 per cent of the total valid cases with no missing data. For the sample to be described as being parametric, a test of skewness and kurtosis was conducted in anticipation that a normal distribution can be ascribed to the dataset if skewness and kurtosis lies between -1.96 to 1.96 (Creswell, 2015). After exploring the normality plots using the tests, it was observed that the statistic divided by the standard error for skewness and kurtosis was **JSEAltX** (0.496 to 0.550, -0.211 to 1.063) and **BBBEEScorecomposite** (0.232 to 0.550, -1.414 to 1.063) respectively. To check if the variables were normally distributed Shapiro-Wilk test of normality was implemented, since the secondary dataset was less than 100. The test which is supposed to be not significant (to show

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<sup>13</sup> This is because the period of coverage was extended from 2003-2016 to 2019 to ensure the newness, robustness and relevance of the dataset.

normality) was *JSEAltX* (0.112), *BBBEEscorecomposite* (0.042). The variable *BBBEEscorecomposite* was therefore not normally distributed. Likewise, the log transformed variables test analysis showed similar results. This informed the researchers' use of SEM to test for the validity and reliability of this study's dataset.

Furthermore, it became necessary to review the four (4) hypotheses using a PLUM ordinal regression procedure. Hypothesis 1 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (1.000) and Deviance (1.000) which was not significant indicating that the data fit the model very well. While its Pseudo R-Square Cox and Snell (0.997) implies that 99.7 per cent of the dependent variable can be explained by the independent variables. Besides, *AltXMarketcap* (0.001, was significant). Likewise, the test of parallel lines or proportional odds, as expected was not supported to be significant (1.000), since the location parameters (i.e. slope coefficients) were not the same across all response categories (with -2 log likelihood of 96.329, df = 12, and Chi Square of 96.329). Correspondingly, Hypothesis 2 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (1.000) and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.997) implies that 99.7 per cent of the dependent variable can be explained by the independent variables. In addition, *AltXMarketcap* (0.001, was significant). Equally, the test of parallel lines or proportional odds, was not significant (1.000), (with -2 log likelihood of 96.329, df = 12, and Chi Square of 96.329).

In addition, Hypothesis 3 had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (1.000) and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.997) implies that 99.7 per cent of the dependent variable can be explained by the independent variables. Besides, *AltXMarketcap* (0.001) and *CashInvestmentActivities* (0.05) were significant. Likewise, the test of parallel lines or proportional odds, was expectedly not significant (1.000), (with -2 log likelihood of 96.329, df = 13, and Chi Square of 96.329). Similarly, Hypothesis 4a had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (0.000) that was significant and Deviance (1.000) which was not significant. While its Pseudo R-Square Cox and Snell (0.997) implies that 99.7 per cent of the dependent variable can be explained by the independent variables. Also, *ValueAdded* (0.005), *ValueTransactions* (0.023) and *SalariesWages* (0.003) were significant. Likewise, the test of parallel lines or proportional odds, was expectedly not significant (1.000), (with -2 log likelihood of 96.329, df = 12, and Chi Square of 96.329).

In the same way, the *BBBEE Score composite* was selected as the dependent variable instead of using the *JSE AltX*, so as to accurately measure the effect of the JSE’s AltX compliance requirements on listed firm’s operations. Therefore, Hypothesis 4b had a model fitting information of (0.000) which was significant, with a goodness-of-fit Pearson (1.000) and Deviance (1.000) which were not significant. While its Pseudo R-Square Cox and Snell (0.997) implies that 99.7 per cent of the dependent variable can be explained by the independent variables. Also, *Patents Trademarks* (0.008, was negatively significant) and *Ebitda* (0.012, was significant). Likewise, the test of parallel lines or proportional odds was as anticipated not significant (1.000), (with -2 log likelihood of 89.738, df = 11, and Chi Square of 89.738). Thus, the discrepancy in the goodness of fit statistics for Hypothesis 4a indicated that the dataset exhibited the characteristics of a not normally distributed data. This meant that only non-parametric testing methods was appropriate for this thesis, justifying the design of a MLM equation (Steele, 2008; Leckie, 2013; Pituch and Stevens, 2016) that can take care of apprehensions about clustering which were raised earlier in the introductory part of this section.

#### 5.18.1.4 THE MLM EQUATION

Browne, Goldstein and Rasbash (2001) proposed the use of classification diagrams in order to explore the benefit of a simplified data structure for the entire MLM dataset. The three (3) level MLM classification diagram depicted in Figure 5.8 indicates the nodal structure for each classification in the hierarchical model. This also reveals that there exists a nested relationship in the dataset which simplifies the 3 level MLM equation to be constructed thereafter (Leckie, 2013).

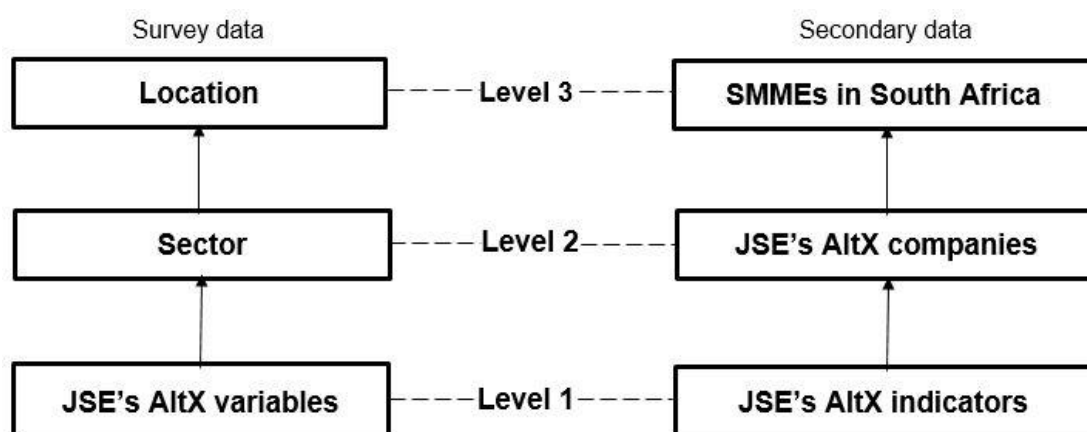


Figure 5.8: Classification diagram for the three-level MLM (Source: Authors’ compilation)

From the survey data 3-Level MLM classification, it is clear that the arrow from the JSE’s AltX variables to the sector node indicates that the JSE’s AltX

variables are nested within sectors. Likewise, the arrow from the sector node to the location node indicates that sectors are nested within locations. It therefore follows that the JSE's AltX variables are also nested within locations, hence there is no basis to draw another arrow that would connect the JSE's AltX variables to location. This is absolutely important, because it could be that the performance of the JSE's AltX can be tied to both the sector where they operate and their locations. Similarly, from the secondary data 3-Level MLM classification, it is clear that the arrow from the JSE's AltX indicators to the JSE's AltX companies' node shows that the JSE's AltX indicators are nested within the JSE's AltX companies. While, the arrow from the JSE's AltX companies' node to the SMME's in South Africa node indicates that the JSE's AltX companies are nested within SMME's in South Africa. It therefore follows that the JSE's AltX indicators are also nested within SMME's in South Africa. Consequently, there is no basis to draw another arrow that would connect the JSE's AltX indicators to SMME's in South Africa. This is absolutely important, because it could be that the performance of the JSE's AltX can be tied to both the number of JSE's AltX companies and the number of SMME's in South Africa.

Having perused the simplified classification diagram above, it was mandatory for the researcher to develop the MLM equation for this thesis. First, the researcher had to establish that the MLM fits the survey/econometric data significantly better than a 2-level model that is nested within the 3-level model, as well as a single-level variance components model (or null or no predictors model) without either a cluster or supercluster effects. Afterwards, the ensuing models were fitted using the maximum likelihood (ML) estimation technique together with likelihood ratio (LR) tests, so as to ascertain parameter estimates and fit statistics (Heck et al., 2014; Osborne, 2017; IBM, 2020). Consequently, the equation below was used to test the null hypothesis that there are no higher-level cluster effects by measuring the ML and LR tests for the single-level model fit statistics in relation to both the 2-level and 3-level models.

$$y_{ijk} = \beta_0 + e_{ijk} \dots\dots\dots (1a)$$

Where for the survey questionnaire  $y_{ijk}$  is the observed mean score for the JSE's AltX variable response  $i$  in a sector  $j$  and in a location  $k$ ,  $\beta_0$  is the mean response across all the locations and  $e_{ijk}$  is the residual error term. Likewise, where for the secondary data  $y_{ijk}$  is the observed mean score for the JSE's AltX indicator  $i$  in JSE's AltX companies  $j$  and in SMMEs in South Africa  $k$ ,  $\beta_0$  is the mean score for all the SMMEs in South Africa and  $e_{ijk}$  is the residual error term.

$$i = 1, \dots, N, \quad j = 1, \dots, J, \quad k = 1, \dots, K \dots\dots\dots (1b)$$

Where for the survey questionnaire N denotes the total number of JSE's AltX variables in the sample, J denotes the total number of sectors in the sample, and, K denotes the total number of locations in the sample. Similarly, where for the secondary data N denotes the total number of JSE's AltX indicators in the sample, J denotes the total number of the JSE's AltX companies in the sample, and, K denotes the total number of SMMEs in South Africa in the sample.

$$e_{ijk} \sim N(0, \sigma_e^2) \dots\dots\dots (1c)$$

Where for the survey questionnaire residual error term, the JSE's AltX variables' variance  $\sigma_e^2$  measures how the JSE's AltX variables are within various sectors/locations. Likewise, where for the secondary data residual error term, the JSE's AltX indicators' variance  $\sigma_e^2$  measures how the JSE's AltX indicators are within various JSE's AltX companies/SMMEs in South Africa. However, for clarity's sake, the null and alternative joint hypotheses can also be written as:

$$H_0 := \sigma_v^2 = 0, \sigma_u^2 = 0 \text{ (no level 3 variation and no level 2 variation)} \dots\dots (1d)$$

For the survey questionnaire, no location variation and no sector variation. While, for the secondary data, no total number of SMMEs in South Africa variation and no total number of the JSE's AltX companies' variation. Therefore, for the survey questionnaire, the location variance  $\sigma_v^2$  measures the differences between locations which endure over time (i.e. across sectors), while the sector  $\sigma_u^2$  variance measures the year-to-year differences in location performances. Similarly, for the secondary data, the total number of SMMEs in South Africa variance  $\sigma_v^2$  measures the differences between the total number of SMMEs in South Africa which endure over time (i.e. across JSE's AltX companies), while the JSE's AltX companies  $\sigma_u^2$  variance measures the year-to-year differences in the total number of SMMEs in South Africa performances.

$$H_1 := \sigma_v^2 > 0, \sigma_u^2 > 0 \text{ (significant level 3 and/or level 2 variation)} \dots\dots (1e)$$

For the survey questionnaire, the alternate joint hypothesis assumes a significant location and/or sector variation. While for the secondary data, the alternate joint hypothesis assumes a significant total number of SMMEs in South Africa and/or JSE's AltX companies' variation. The LR test statistic for testing the null joint hypothesis is calculated as:

$$LR = (-2\log L_0) - 2\log L_1 \dots\dots\dots (1f)$$

Where  $L_0$  and  $L_1$  are the likelihood values for the single-level model and the three-level (or two-level) model, respectively. According to Leckie (2013) the LR test statistic expressed in terms of deviance statistics can be interpreted as the reduction in deviance (i.e. badness of fit) based on the progression from a simpler model to a more complex model.

$$LR = D_0 - D_1 \dots\dots\dots (1g)$$

Where  $D_0$  and  $D_1$  are the deviance statistics for the single-level model and the three-level (or two-level) model, respectively. The LR test statistic together with its chi-squared distribution with degrees of freedom yields a  $p$ -value that is used to determine whether the three-level (or two-level) model fits the data significantly better than the single-level model (Heck et al., 2014; IBM, 2020).

Next, an MLM equation was developed, so as to test for supercluster effects. Thus, the null hypothesis that there are no location effects was tested by comparing the three-level model to the ensuing two-level JSE's AltX variables-within-sectors model for the survey questionnaire. While the null hypothesis that there are no total number of SMMEs in South Africa effects was tested by comparing the three-level model to the following two-level JSE's AltX indicators-within-the JSE's AltX companies' model for the secondary data. This gives rise to level 2a below:

$$y_{ijk} = \beta_0 + u_{jk} + e_{ijk} \dots\dots\dots (2a)$$

Where for the survey questionnaire  $y_{ijk}$  is the observed mean score for the JSE's AltX variable response  $i$  in a sector  $j$  and in a location  $k$ ,  $\beta_0$  is the mean response across all the locations,  $u_{jk}$  is the effect of a sector  $j$  within a particular location  $k$ , and  $e_{ijk}$  is the residual error term. Likewise, where for the secondary data  $y_{ijk}$  is the observed mean score for the JSE's AltX indicator  $i$  in JSE's AltX companies  $j$  and in SMMEs in South Africa  $k$ ,  $\beta_0$  is the mean score for all the SMMEs in South Africa,  $u_{jk}$  is the effect of JSE's AltX companies  $j$  within SMMEs in South Africa  $k$ , and  $e_{ijk}$  is the residual error term. Also, it is assumed that the random effects and residual errors are independent of each other, and statistically normally distributed with their test results having zero means and constant variances.

$$u_{jk} \sim N(0, \sigma_u^2) \dots\dots\dots (2b)$$

Where for the survey questionnaire the effect of a sector  $j$  within a particular location  $k$ , the sector's variance  $\sigma_u^2$  measures the year-to-year differences in location performances. Likewise, where for the secondary data the effect of the JSE's AltX companies  $j$  operating within SMMEs in South Africa  $k$ , the JSE's

AltX companies' variance  $\sigma_u^2$  measures the year-to-year differences in the number of SMMEs in South Africa performances.

$$e_{ijk} \sim N(0, \sigma_e^2) \dots\dots\dots (2c)$$

Where for the survey questionnaire residual error term, the JSE's AltX variables' variance  $\sigma_e^2$  measures how the JSE's AltX variables are within various sectors/locations. Similarly, where for the secondary data residual error term, the JSE's AltX indicators' variance  $\sigma_e^2$  measures how the JSE's AltX indicators are within various JSE's AltX companies/SMMEs in South Africa. Nevertheless, for precision purposes, the null and alternative joint hypotheses can also be written as:

$$H_0 := \sigma_v^2 = 0 \text{ (no level 3 variation)} \dots\dots\dots (2d)$$

$$H_1 := \sigma_v^2 > 0 \text{ (significant level 3 variation)} \dots\dots\dots (2e)$$

$$LR = (-2\log L_0) - 2\log L_1 = D_0 - D_1 \dots\dots\dots (2f)$$

Where  $L_0$  and  $L_1$ , as well as  $D_0$  and  $D_1$  were assumed to be the likelihood (and deviance) values for the two-level JSE's AltX variables-within-sectors model and the three-level model, respectively for the questionnaire survey. While for the secondary data,  $L_0$  and  $L_1$  (as well as  $D_0$  and  $D_1$ ) were assumed to be the likelihood (and deviance) values for the two-level JSE's AltX indicators-within-the JSE's AltX companies' model and the three-level model, respectively.

Consequently, the value of  $L_0$  that was used to test for the location/number of SMMEs in South Africa effects varies from the value of  $L_0$  which was used in the first instance to determine whether a multilevel model was preferable to a single level model. But the value of  $L_1$  remained the same in arrangement used for the prior LR test (Leckie, 2013; Osborne, 2017). Correspondingly, the LR test statistic was compared with a chi-squared distribution with one degree of freedom, this resulted in a  $p$ -value that was used to ascertain whether the three-level model fits the data significantly better than the two-level model.

The researcher then moved on to test the null hypothesis that there are no sector effects in the questionnaire survey via comparing the three-level model to the ensuing two-level JSE's AltX variables-within-location model. For the secondary data, a test was also conducted to measure the null hypothesis that there are no number of JSE's AltX companies' effects by comparing the three-level model to the succeeding two-level JSE's AltX companies-within-SMMEs in South Africa model. The Level 2b equation below shows this relationship:

$$y_{ijk} = \beta_0 + v_k + e_{ijk} \dots\dots\dots (3a)$$

Where for the survey questionnaire  $y_{ijk}$  is the observed mean score for the JSE's AltX variable response  $i$  in a sector  $j$  and in a location  $k$ ,  $\beta_0$  is the mean response across all the locations,  $v_k$  is the effect of a location  $k$ , and  $e_{ijk}$  is the residual error term. Likewise, where for the secondary data  $y_{ijk}$  is the observed mean score for the JSE's AltX indicator  $i$  in JSE's AltX companies  $j$  and in SMMEs in South Africa  $k$ ,  $\beta_0$  is the mean score for all the SMMEs in South Africa,  $v_k$  is the effect of SMMEs in South Africa  $k$ , and  $e_{ijk}$  is the residual error term. Also, it is assumed that the random effects and residual errors are independent of each other, and statistically normally distributed with their test results having zero means and constant variances (Heck et al., 2014; IBM, 2020).

$$v_k \sim N(0, \sigma_v^2) \dots\dots\dots (3b)$$

Where for the survey questionnaire the effect of a particular location is  $k$ , and the location variance  $\sigma_v^2$  measures the differences between various locations over time (i.e. across sectors). Likewise, where for the secondary data the effect of the number of SMMEs in South Africa is  $k$ , and the SMMEs in South Africa variance  $\sigma_v^2$  measures the differences between the number of SMMEs in South Africa over time (i.e. across the JSE's AltX companies).

$$e_{ijk} \sim N(0, \sigma_e^2) \dots\dots\dots (3c)$$

Where for the survey questionnaire residual error term, the JSE's AltX variables' variance  $\sigma_e^2$  measures how the JSE's AltX variables are within various sectors/locations. In the same way, where for the secondary data residual error term, the JSE's AltX indicators' variance  $\sigma_e^2$  measures how the JSE's AltX indicators are within various JSE's AltX companies/SMMEs in South Africa. Nonetheless, for accuracy purposes, the null and alternative joint hypotheses can also be written as:

$$H_0 := \sigma_u^2 = 0 \dots\dots\dots (3d)$$

This implies that there is no within-location-between-sector variation – for the questionnaire survey, and no within-SMMEs in South Africa-between-JSE's AltX companies' variation – for the secondary data.

$$H_1 := \sigma_u^2 > 0 \dots\dots\dots (3e)$$

This suggests that there exists significant within-location-between-sector variation – for the questionnaire survey, and significant within-SMMEs in South Africa-between-JSE's AltX companies' variation – for the secondary data.



$$LR = (-2\log L_0) - 2\log L_1 = D_0 - D_1 \dots\dots\dots (3f)$$

Where  $L_0$  and  $L_1$ , as well as  $D_0$  and  $D_1$  were assumed to be the likelihood (and deviance) values for the two-level JSE's AltX variables-within-sectors model and the three-level model, respectively for the questionnaire survey (Leckie, 2013). While for the secondary data,  $L_0$  and  $L_1$  (as well as  $D_0$  and  $D_1$ ) were assumed to be the likelihood (and deviance) values for the two-level JSE's AltX indicators-within-the JSE's AltX companies' model and the three-level model, respectively.

Consequently, the value of  $L_0$  that was used to test for the sector/JSE's AltX companies' effects varies from the value of  $L_0$  which was used to determine whether this model differs from the two previous ones. However, the value of  $L_1$  remained the same as the one used in the previous LR test. Correspondingly, the LR test statistic was compared with a chi-squared distribution with one degree of freedom, and this gave rise to a  $p$ -value that was used to establish whether the three-level model fits the dataset better than a two-level model (Pituch and Stevens, 2016; Osborne, 2017). Next, the researcher had to consider a special case three-level variance components (random intercept) model which includes an intercept, cluster and supercluster random effects and the residual error term of the equation in Level 3 of the form:

$$y_{ijk} = \beta_0 + v_k + u_{jk} + e_{ijk} \dots\dots\dots (4a)$$

Where for the survey questionnaire  $y_{ijk}$  is the observed mean score for the JSE's AltX variable response  $i$  in a sector  $j$  and in a location  $k$ ,  $\beta_0$  is the mean response across all the locations,  $v_k$  is the effect of a location  $k$ ,  $u_{jk}$  is the effect of a sector  $j$  within a particular location  $k$ , and  $e_{ijk}$  is the residual error term. Likewise, where for the secondary data  $y_{ijk}$  is the observed mean score for the JSE's AltX indicator  $i$  in JSE's AltX companies  $j$  and in SMMEs in South Africa  $k$ ,  $\beta_0$  is the mean score for all the SMMEs in South Africa,  $v_k$  is the effect of SMMEs in South Africa  $k$ ,  $u_{jk}$  is the effect of JSE's AltX companies  $j$  within SMMEs in South Africa  $k$ , and  $e_{ijk}$  is the residual error term. Also, it is assumed that the random effects and residual errors are independent of each other, and statistically normally distributed with their test results having zero means and constant variances.

$$v_k \sim N(0, \sigma_v^2) \dots\dots\dots (4b)$$

$$u_{jk} \sim N(0, \sigma_u^2) \dots\dots\dots (4c)$$

$$e_{ijk} \sim N(0, \sigma_e^2) \dots\dots\dots (4d)$$

$$H_0 := \sigma_v^2 = 0, \sigma_u^2 = 0 \dots\dots\dots (4e)$$

This indicates that there are no variations between locations, as well as no within-location-between-sector variation – for the questionnaire survey. And also, there are no variations between SMMEs in South Africa, as well as no within-SMMEs in South Africa-between-JSE’s AltX companies’ variation – for the secondary data.

$$H_1 := \sigma_v^2 > 0, \sigma_u^2 > 0 \dots\dots\dots (4f)$$

This point toward the fact that there exist significant variations between locations, as well as significant within-location-between-sector variation – for the questionnaire survey. In addition, it also hints that there exist significant variations between SMMEs in South Africa, as well as significant within-SMMEs in South Africa-between-JSE’s AltX companies’ variation – for the secondary data.

$$LR = (-2\log L_0) - 2\log L_1 = D_0 - D_1 \dots\dots\dots (4g)$$

Where  $L_0$  and  $L_1$ , as well as  $D_0$  and  $D_1$  were assumed to be the likelihood (and deviance) values for the single-level (or two-level) and the three-level model, for the questionnaire survey (Creswell and Plano Clark, 2018). While for the secondary data,  $L_0$  and  $L_1$  (as well as  $D_0$  and  $D_1$ ) were assumed to be the likelihood (and deviance) values for the single-level (or two-level) and the three-level model. Likewise, the LR test statistic was compared with a chi-squared distribution with one degree of freedom, and this gave rise to a  $p$ -value that was used to establish whether the three-level model fits the dataset better than either a single-level or two-level model (Heck et al., 2014).

Since the MLM equation for this study has a three-level classification, it gives rise to three variance components  $\sigma_v^2$ ,  $\sigma_u^2$ , and  $\sigma_e^2$  (Leckie, 2013) as explained earlier. Consequently, the researcher had to interpret the test results of the variance components parameter estimates using either: coverage intervals; and/or variance partition coefficients (VPCs); and/or intraclass correlation coefficients (ICCs). Furthermore, due to the fact that absolute care needs to be taken when interpreting the estimated variance parameters in a random intercept model with covariates, the researcher considered it important to first of all use the VPC to interpret the relative magnitudes of these variation putting into cognisance the unexplained portion of the predictor variables that lies each level of the model hierarchy (Leckie, 2013; Heck et al., 2014; Pituch and Stevens, 2016; Osborne, 2017; IBM, 2020). Then, if possible, backup the results with either ICCs or coverage intervals which can interpret the absolute magnitude of the variance components. Hence, in this study, it is necessary to

stipulate the level one, two and three VPC in an equation form, so as to clarify the curiosity of the users/readers of this research with respect to the derivation formula for the model variance test statistic.

The level three VPC is calculated as the ratio of the level three variance (i.e. location/SMMEs in South Africa) to the total variance:

$$VPC_v = \frac{\sigma_v^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2} \dots \dots \dots (5a)$$

The level two VPC is calculated as the ratio of the level two variance (i.e. sector/JSE's AltX companies) to the total variance:

$$VPC_u = \frac{\sigma_u^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2} \dots \dots \dots (5b)$$

The level one VPC is calculated as the ratio of the level one variance (i.e. JSE's AltX variables/JSE's AltX indicators) to the total variance:

$$VPC_e = \frac{\sigma_e^2}{\sigma_v^2 + \sigma_u^2 + \sigma_e^2} \dots \dots \dots (5c)$$

**5.18.1.5 ADDING LEVEL 1, 2 AND 3 PREDICTOR VARIABLES**

In order to test the hypothesis for this study, the researcher had to add predictor variables at different levels of the MLM equation which is a straightforward procedure.

$$y_{ijk} = \beta_0 + e_{ijk} \dots \dots \dots (6.0)$$

For level 1 (survey questionnaire) the equation becomes:

$$AltXeffect_{ijk} = \beta_0 + e_{ijk} \text{ (Hypothesis 1)} \dots \dots \dots (6.1a)$$

$$EntreLevel_{ijk} = \beta_0 + e_{ijk} \text{ (Hypothesis 2)} \dots \dots \dots (6.1b)$$

$$SCapLE_{ijk} = \beta_0 + e_{ijk} \text{ (Hypothesis 3)} \dots \dots \dots (6.1b)$$

$$CompReq_{ijk} = \beta_0 + e_{ijk} \text{ (Hypothesis 4)} \dots \dots \dots (6.1b)$$

For level 1 (secondary data) the equation becomes:

$$LogJSEAltX_{ijk} = \beta_0 + e_{ijk} \text{ (Hypothesis 1)} \dots \dots \dots (6.2a)$$

$$LogJSEAltX_{ijk} = \beta_0 + e_{ijk} \text{ (Hypothesis 2)} \dots \dots \dots (6.2b)$$

$$\text{LogJSEAltX}_{ijk} = \beta_0 + e_{ijk} \quad (\text{Hypothesis 3}) \dots\dots\dots (6.2c)$$

$$\text{LogJSEAltX}_{ijk} = \beta_0 + e_{ijk} \quad (\text{Hypothesis 4a}) \dots\dots\dots (6.2d.i)$$

$$\text{LogBBBEEScorecomposite}_{ijk} = \beta_0 + e_{ijk} \quad (\text{Hypothesis 4b}) \dots\dots\dots (6.2d.ii)$$

The level 2 equation turns out to be:

$$y_{ijk} = \beta_0 + \beta_1 x_{1ijk} + \beta_2 x_{2ijk} + u_{jk} + e_{ijk} \quad \dots\dots\dots (7.0)$$

Where  $\beta_0 + \beta_1 x_{1ijk} + \beta_2 x_{2ijk}$  is the fixed part of the 2-level MLM model and  $u_{jk} + e_{ijk}$  can be described as the random part of the model. The fixed parameters specify an average or mean relationship across the entire sample i.e. between the response and the predictor variables. However, the random parameters specify how the sector (or location) and the JSE's AltX companies (or SMMEs in South Africa) relationships vary from the stipulated mean relationship.

Similarly, the fixed model level 1 predictor variable with slope coefficient  $\beta_1$  is  $x_{1ijk}$ , while  $x_{2ijk}$  is its level 2 counterpart predictor variable with slope coefficient  $\beta_2$ . Furthermore, the slope coefficient  $\beta_1$  can be described as the impact of a 1-unit increase in  $x_{1ijk}$  on  $y_{ijk}$  having adjusted for  $x_{2ijk}$ .

For level 2 questionnaire survey the equation becomes:

$$\text{AltXeffect}_{ijk} = \beta_0 + \beta_1 \text{Item2a}_{ijk} + \beta_2 \text{Item2b}_{ijk} + \beta_3 \text{Item2c}_{ijk} + \beta_4 \text{Item2d}_{ijk} + \beta_5 \text{Item2e}_{ijk} + \beta_6 \text{Item2f}_{ijk} + \beta_7 \text{Item2g}_{ijk} + u_{jk} + e_{ijk}$$

$$(\text{Hypothesis 1}) \dots\dots\dots (7.1a)$$

$$\text{EntreLevel}_{ijk} = \beta_0 + \beta_1 \text{Item3a}_{ijk} + \beta_2 \text{Item3b}_{ijk} + \beta_3 \text{Item3c}_{ijk} + \beta_4 \text{Item3d}_{ijk} + \beta_5 \text{Item3e}_{ijk} + \beta_6 \text{Item3f}_{ijk} + \beta_7 \text{Item3g}_{ijk} + u_{jk} + e_{ijk}$$

$$(\text{Hypothesis 2}) \dots\dots\dots (7.1b)$$

$$\text{SCapLE}_{ijk} = \beta_0 + \beta_1 \text{Item4a}_{ijk} + \beta_2 \text{Item4b}_{ijk} + \beta_3 \text{Item4c}_{ijk} + \beta_4 \text{Item4d}_{ijk} + \beta_5 \text{Item4e}_{ijk} + \beta_6 \text{Item4f}_{ijk} + \beta_7 \text{Item4g}_{ijk} + u_{jk} + e_{ijk}$$

$$(\text{Hypothesis 3}) \dots\dots\dots (7.1c)$$

$$\begin{aligned} \mathbf{CompReq}_{ijk} = & \beta_0 + \beta_1 \mathbf{Item5a}_{ijk} + \beta_2 \mathbf{Item5b}_{ijk} + \beta_3 \mathbf{Item5c}_{ijk} + \\ & \beta_4 \mathbf{Item5d}_{ijk} + \beta_5 \mathbf{Item5e}_{ijk} + \beta_6 \mathbf{Item5f}_{ijk} + \beta_7 \mathbf{Item5g}_{ijk} + \\ & u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 4) ..... (7.1d)

For level 2 secondary data the equation becomes:

$$\begin{aligned} \mathbf{LogJSEAltX}_{ijk} = & \beta_0 + \beta_1 \mathbf{LogAltXMarketcap}_{ijk} + \beta_2 \mathbf{Delistings}_{ijk} + \\ & \beta_3 \mathbf{LogEbitda}_{ijk} + \beta_4 \mathbf{LogEmployed}_{ijk} + \beta_5 \mathbf{LogForeignAssets}_{ijk} + \\ & \beta_6 \mathbf{LogGoodwill}_{ijk} + \beta_7 \mathbf{LogInvestmentsLoans}_{ijk} + \\ & \beta_8 \mathbf{LogOperatingProfit/Loss}_{ijk} + \beta_9 \mathbf{LogTotalEquityLiabilities}_{ijk} + \\ & \beta_{10} \mathbf{Transfers}_{ijk} + \beta_{11} \mathbf{LogTurnover}_{ijk} + \beta_{12} \mathbf{LogValueAdded}_{ijk} + u_{jk} + \\ & e_{ijk} \end{aligned}$$

(Hypothesis 1) ..... (7.2a)

$$\begin{aligned} \mathbf{LogJSEAltX}_{ijk} = & \beta_0 + \beta_1 \mathbf{LogSMMESouthAfrica}_{ijk} + \beta_2 \mathbf{LogTeaRate}_{ijk} + \\ & \beta_3 \mathbf{LogTotalEquityLiabilities}_{ijk} + \beta_4 \mathbf{LogTurnover}_{ijk} + \\ & \beta_5 \mathbf{LogValueAdded}_{ijk} + \beta_6 \mathbf{LogAltXMarketcap}_{ijk} + \beta_7 \mathbf{LogROA}_{ijk} + \\ & \beta_8 \mathbf{LogQuickRatio}_{ijk} + \beta_9 \mathbf{LogPatentsTrademarks}_{ijk} + \\ & \beta_{10} \mathbf{LogInvestmentsLoans}_{ijk} + \beta_{11} \mathbf{LogForeignAssets}_{ijk} + \\ & \beta_{12} \mathbf{LogEarningsYield}_{ijk} + \beta_{13} \mathbf{LogCurrentRatio}_{ijk} + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 2) ..... (7.2b)

$$\begin{aligned} \mathbf{LogJSEAltX}_{ijk} = & \beta_0 + \beta_1 \mathbf{LogAltXMarketcap}_{ijk} + \\ & \beta_2 \mathbf{LogCashInvestmentActivities}_{ijk} + \beta_3 \mathbf{LogEarningsYield}_{ijk} + \\ & \beta_4 \mathbf{LogForeignAssets}_{ijk} + \beta_5 \mathbf{LogForeignEmployees}_{ijk} + \\ & \beta_6 \mathbf{LogForeignLiabilities}_{ijk} + \beta_7 \mathbf{LogGoodwill}_{ijk} + \\ & \beta_8 \mathbf{LogInvestmentsLoans}_{ijk} + \beta_9 \mathbf{LogPatentsTrademarks}_{ijk} + \\ & \beta_{10} \mathbf{LogQuickRatio}_{ijk} + \beta_{11} \mathbf{LogROA}_{ijk} + \\ & \beta_{12} \mathbf{LogTotalEquityLiabilities}_{ijk} + \beta_{13} \mathbf{LogTurnover}_{ijk} + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 3) ..... (7.2c)

$$\begin{aligned} \mathbf{LogJSEAltX}_{ijk} = & \beta_0 + \beta_1 \mathbf{LogBBBEEScorecomposite}_{ijk} + \\ & \beta_2 \mathbf{LogProfitAfterInterestTax}_{ijk} + \beta_3 \mathbf{LogTurnover}_{ijk} + \\ & \beta_4 \mathbf{LogValueAdded}_{ijk} + \beta_5 \mathbf{LogValueTransactions}_{ijk} + \\ & \beta_6 \mathbf{LogPatentsTrademarks}_{ijk} + \beta_7 \mathbf{LogROA}_{ijk} + \beta_8 \mathbf{LogEarningsYield}_{ijk} + \\ & \beta_9 \mathbf{LogEbitda}_{ijk} + \beta_{10} \mathbf{LogGoodwill}_{ijk} + \beta_{11} \mathbf{LogSalariesWages}_{ijk} + \\ & \beta_{12} \mathbf{LogOperatingProfit/Loss}_{ijk} + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 4a) ..... (7.2d.i)

$$\begin{aligned} \text{LogBBBEEscore}_{ijk} = & \beta_0 + \beta_1 \text{LogJSEAltX}_{ijk} + \\ & \beta_2 \text{LogProfitAfterInterestTax}_{ijk} + \beta_3 \text{LogTurnover}_{ijk} + \\ & \beta_4 \text{LogValueAdded}_{ijk} + \beta_5 \text{LogValueTransactions}_{ijk} + \\ & \beta_6 \text{LogPatentsTrademarks}_{ijk} + \beta_7 \text{LogROA}_{ijk} + \beta_8 \text{LogEarningsYield}_{ijk} + \\ & \beta_9 \text{LogEbitda}_{ijk} + \beta_{10} \text{LogGoodwill}_{ijk} + \beta_{11} \text{LogSalariesWages}_{ijk} + \\ & \beta_{12} \text{LogOperatingProfit/Loss}_{ijk} + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 4b) ..... (7.2d.ii)

The level 3 equation model can be thus written as:

$$y_{ijk} = \beta_0 + \beta_1 x_{1ijk} + \beta_2 x_{2ijk} + \beta_3 x_{3k} + v_k + u_{jk} + e_{ijk} \quad \text{..... (8.0)}$$

Where  $\beta_0 + \beta_1 x_{1ijk} + \beta_2 x_{2ijk} + \beta_3 x_{3k}$  is the fixed part of the 3-level MLM model and  $v_k + u_{jk} + e_{ijk}$  can be described as the random part of the model. The fixed parameters specify an average or mean relationship across the entire sample i.e. between the response and the predictor variables; for example, the connection between the mean location/SMMEs in South Africa. However, the random parameters specify how the location and sector, as well as the number of SMMEs in South Africa and the number of JSE's AltX companies' relationships diverge from this overall mean relationship.

Similarly, the fixed model level 1 predictor variable with slope coefficient  $\beta_1$  is  $x_{1ijk}$ , while  $x_{2ijk}$  is its level 2 counterpart predictor variable with slope coefficient  $\beta_2$  and  $x_{3k}$  is the predictor variable for level 3 with slope coefficient  $\beta_3$ . Furthermore, the slope coefficient  $\beta_1$  can be described as the impact of a 1-unit increase in  $x_{1ijk}$  on  $y_{ijk}$  having adjusted for  $x_{2ijk}$  and  $x_{3k}$ . Besides, the slope coefficients  $\beta_2$  and  $\beta_3$  are assumed to have parallel interpretations.

For level 3 questionnaire survey the equation becomes:

$$\begin{aligned} \text{AltXeffect}_{ijk} = & \beta_0 + \beta_1 \text{Item2a}_{ijk} + \beta_2 \text{Item2b}_{ijk} + \beta_3 \text{Item2c}_{ijk} + \\ & \beta_4 \text{Item2d}_{ijk} + \beta_5 \text{Item2e}_{ijk} + \beta_6 \text{Item2f}_{ijk} + \beta_7 \text{Item2g}_{ijk} + \\ & v_k + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 1) ..... (8.1a)

$$\begin{aligned} \text{EntreLevel}_{ijk} = & \beta_0 + \beta_1 \text{Item3a}_{ijk} + \beta_2 \text{Item3b}_{ijk} + \beta_3 \text{Item3c}_{ijk} + \\ & \beta_4 \text{Item3d}_{ijk} + \beta_5 \text{Item3e}_{ijk} + \beta_6 \text{Item3f}_{ijk} + \beta_7 \text{Item3g}_{ijk} + \\ & v_k + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 2) ..... (8.1b)

$$SCapLE_{ijk} = \beta_0 + \beta_1 Item4a_{ijk} + \beta_2 Item4b_{ijk} + \beta_3 Item4c_{ijk} + Item4d_{ijk} + \beta_5 Item4e_{ijk} + \beta_6 Item4f_{ijk} + \beta_7 Item4g_{ijk} + v_k + u_{jk} + e_{ijk}$$

(Hypothesis 3) ..... (8.1c)

$$CompReq_{ijk} = \beta_0 + \beta_1 Item5a_{ijk} + \beta_2 Item5b_{ijk} + \beta_3 Item5c_{ijk} + \beta_4 Item5d_{ijk} + \beta_5 Item5e_{ijk} + \beta_6 Item5f_{ijk} + \beta_7 Item5g_{ijk} + v_k + u_{jk} + e_{ijk}$$

(Hypothesis 4) ..... (8.1d)

For level 3 secondary data the equation turns out to be:

$$LogJSEAltX_{ijk} = \beta_0 + \beta_1 LogAltXMarketcap_{ijk} + \beta_2 Delistings_{ijk} + \beta_3 LogEbitda_{ijk} + \beta_4 LogEmployed_{ijk} + \beta_5 LogForeignAssets_{ijk} + \beta_6 LogGoodwill_{ijk} + \beta_7 LogInvestmentsLoans_{ijk} + \beta_8 LogOperatingProfit/Loss_{ijk} + \beta_9 LogTotalEquityLiabilities_{ijk} + \beta_{10} Transfers_{ijk} + \beta_{11} LogTurnover_{ijk} + \beta_{12} LogValueAdded_{ijk} + v_k + u_{jk} + e_{ijk}$$

(Hypothesis 1) ..... (8.2a)

$$LogJSEAltX_{ijk} = \beta_0 + \beta_1 LogSMMESouthAfrica_{ijk} + \beta_2 LogTeaRate_{ijk} + \beta_3 LogTotalEquityLiabilities_{ijk} + \beta_4 LogTurnover_{ijk} + \beta_5 LogValueAdded_{ijk} + \beta_6 LogAltXMarketcap_{ijk} + \beta_7 LogROA_{ijk} + \beta_8 LogQuickRatio_{ijk} + \beta_9 LogPatentsTrademarks_{ijk} + \beta_{10} LogInvestmentsLoans_{ijk} + \beta_{11} LogForeignAssets_{ijk} + \beta_{12} LogEarningsYield_{ijk} + \beta_{13} LogCurrentRatio_{ijk} + v_k + u_{jk} + e_{ijk}$$

(Hypothesis 2) ..... (8.2b)

$$LogJSEAltX_{ijk} = \beta_0 + \beta_1 LogAltXMarketcap_{ijk} + \beta_2 LogCashInvestmentActivities_{ijk} + \beta_3 LogEarningsYield_{ijk} + \beta_4 LogForeignAssets_{ijk} + \beta_5 LogForeignEmployees_{ijk} + \beta_6 LogForeignLiabilities_{ijk} + \beta_7 LogGoodwill_{ijk} + \beta_8 LogInvestmentsLoans_{ijk} + \beta_9 LogPatentsTrademarks_{ijk} + \beta_{10} LogQuickRatio_{ijk} + \beta_{11} LogROA_{ijk} + \beta_{12} LogTotalEquityLiabilities_{ijk} + \beta_{13} LogTurnover_{ijk} + v_k + u_{jk} + e_{ijk}$$

(Hypothesis 3) ..... (8.2c)

$$LogJSEAltX_{ijk} = \beta_0 + \beta_1 LogBBBEEScorecomposite_{ijk} + \beta_2 LogProfitAfterInterestTax_{ijk} + \beta_3 LogTurnover_{ijk} + \beta_4 LogValueAdded_{ijk} + \beta_5 LogValueTransactions_{ijk} + \beta_6 LogPatentsTrademarks_{ijk} + \beta_7 LogROA_{ijk} + \beta_8 LogEarningsYield_{ijk} + v_k + u_{jk} + e_{ijk}$$

$$\beta_9 \mathbf{LogEbitda}_{ijk} + \beta_{10} \mathbf{LogGoodwill}_{ijk} + \beta_{11} \mathbf{LogSalariesWages}_{ijk} + \beta_{12} \mathbf{LogOperatingProfit/Loss}_{ijk} + v_k + u_{jk} + e_{ijk}$$

(Hypothesis 4a) ..... (8.2d.i)

$$\begin{aligned} \mathbf{LogBBBEESScorecomposite}_{ijk} = & \beta_0 + \beta_1 \mathbf{LogJSEAltX}_{ijk} + \\ & \beta_2 \mathbf{LLogProfitAfterInterestTax}_{ijk} + \beta_3 \mathbf{LogTurnover}_{ijk} + \\ & \beta_4 \mathbf{LogValueAdded}_{ijk} + \beta_5 \mathbf{LogValueTransactions}_{ijk} + \\ & \beta_6 \mathbf{LogPatentsTrademarks}_{ijk} + \beta_7 \mathbf{LogROA}_{ijk} + \beta_8 \mathbf{LogEarningsYield}_{ijk} + \\ & \beta_9 \mathbf{LogEbitda}_{ijk} + \beta_{10} \mathbf{LogGoodwill}_{ijk} + \beta_{11} \mathbf{LogSalariesWages}_{ijk} + \\ & \beta_{12} \mathbf{LogOperatingProfit/Loss}_{ijk} + v_k + u_{jk} + e_{ijk} \end{aligned}$$

(Hypothesis 4b) ..... (8.2d.ii)

Following previous statistical analysis procedures, the fitted 3 level model z-ratios and Wald tests was used to test the significance of the predictor variables (Torres-Reyna, 2010; Osborne, 2017). However, the random effects and residual errors' interpretation was independent of the predictor variables. While the estimate of covariance parameters was interpreted through a combination of VPCs, coverage intervals and ICCs testing procedures (Leckie, 2013).

### 5.18.2 QUALITATIVE DATA ANALYSIS

As earlier discussed, since this study utilises a mixed research design, there was a dire need to briefly discourse the analysis of the third phase of the current study using qualitative case study method. According to Yin (2014) the qualitative approach assists the researcher to determine consistent patterns in the results identified during preceding phases of a study, as well as help the researcher to elaborate on the quantitative findings based on informant's responses. Consequently, 10 JSE's AltX CEOs/directors/TMT members were carefully selected and interviewed. The findings of this stage culminated in the development of themes that yielded rich underlying details – where it was impossible for the quantitative approach to do so. Despite the fact that interpretivist researchers are encouraged to use induction when analysing qualitative data (Creswell and Plano Clark, 2018), the foremost authority in case study research, design and methods Robert K. Yin (Yin, 2014) recommends the use of a deductive approach since it is more suitable. Moreover, according to Lakew (2015) qualitative data analysis can also be implemented, so as to examine, test, re-test, confirm or recombine empirical evidence in a manner that answers the research questions more effectively.

Furthermore, Yin (2014) specified four different reliable techniques which can be used to analyse the empirical data contained in a qualitative case study, which are as follows (1) pattern matching, (2) explanation building, (3) time-series and (4) replication. Basically, these abovementioned qualitative data



analysis approach simplifies and synthesises information which can be extracted from traditional qualitative data analysis techniques such as content, typology, narrative, domain, logical/matrix, discourse, metaphorical, componential, taxonomic, hermeneutical, thematic and framework analysis, as well as constant comparison/grounded theory analysis, analytic induction, quasi-statistics, event analysis (or microanalysis), semiotics and phenomenology (or heuristic analysis). According to Creswell (2015) pattern matching is a rubric for assessing construct validity because it addresses a non-random matching or pattern of findings between the empirical data collected and the predicted data, which is based on theory. This permits the researcher to gain inferences that allow the generation of thematic patterns for precise predictions to occur. In this study, theoretical patterns and observed patterns were matched during the qualitative case study analysis process. Consequently, a concept map was developed in order to identify themes that can be observed from the quantitative data analysis phase via established correlations that were generated thereafter. This aided the generalisation of facts from the qualitative case study phase of this research.

First of all, the profiles of the interview participants were selected from the survey sample, and then coded, so as to guarantee their anonymity. Secondly, the data collected/generated from the interview sessions were organised, classified, edited and analysed qualitatively. Thirdly, the interviewees responses were tabulated (i.e. 2 = yes, 0 = no and 1 = undecided). Lastly, the key findings were reported using the SWOT (strength, weaknesses, opportunities and threat) opinions generated from the comments section of the survey questionnaire, using the interview responses to reinforce the findings generated from the TagCrowd word visualisation. Likewise, cross-case analysis was implemented in order to identify the differences between various themes elicited from the SWOT data. More importantly, this procedure was carried out to complement (not to critic) the survey phase of this study in order to obtain a thick, rich and vivid description of the phenomenon under investigation.

### **5.19 ETHICAL CONSIDERATIONS**

Ethical issues have received considerable amount of attention in social and management science research. Numerous problems like voluntary participation, ensuring that the participants experience no physical, emotional or monetary harm, guaranteeing participants' anonymity and confidentiality, avoiding dishonesty, as well as tolerating an objective and fair reporting process has been identified as the major ethical considerations in social and management science research (Lakew, 2015). Consequently, the researcher conducted this research study in an ethically responsible manner, which is in line with the University of South Africa's strict ethical guidelines for carrying out

research of this magnitude. More so, this was achieved through the demonstration of responsible research practices which ensured that all participants' autonomy were respected via an open-minded risk-benefit analysis that employed fair research procedures (Creswell, 2015).

As a rule of thumb, in this study, the researcher ensured that all the respondents' and interviewees' views/opinions were treated with utmost confidentiality, by eliminating any possible identifiers that would break, leak or reveal any form of anonymity, thus, protecting their privacy. Also, no other party, person or firm have access to the completed survey questionnaire data and/or responses. In addition, the data was stored in a password protected and encrypted file that would be submitted to my supervisor for safe storage, after the completion of this thesis report. Going further, the researcher used objective reporting standards during the interpretation and presentation of the findings of this research. This was carried out professionally, in a comprehensive, authentic and truthful manner without any modification to the respondents' responses – due to personal interests. In general, the following ethical principles were adhered to by the researcher throughout the course of this study:

- ❖ **Principle of informed consent:** The researcher ensured that all participants participated in the study voluntarily without the use of force. This implied that prospective research participants were adequately informed about the survey questionnaire/interview procedures and the risks involved in this research, before giving their consent to participate. Likewise, all participants were informed about the objectives of this study, and were also told that their responses would be used for academic purposes only. More so, they were required to fill and sign either the survey participant information sheet and/or the interview participant information sheet, as well as the consent form for participation in survey and/or consent form for participation in interview. In addition, the assurance or the guarantee of anonymity and/or confidentiality of data motivated the participants to participate on their own accord. Moreover, unwilling prospective participants' decision not to participate was appreciated with thanks without any issue.
- ❖ **Participants' protection from harm:** In strict adherence to ethical standards, the researcher ensured that all participants were not at risk or harm (i.e. physical, psychological or monetary) as a result of their participation in either the questionnaire survey or interview. Also, non-ethical questions or personal questions were avoided with respect to the respondent's personal lives. Thus, avoiding harm and/or embarrassment concurrently.

- ❖ **Right to privacy and confidentiality:** Most importantly, the participants were assured of anonymity and confidentiality with respect to the data provided by them, in this research. Similarly, the questionnaire records and the semi-structured interview protocol was kept safely in a locked cabinet by the principal investigator (i.e. the researcher) during the compilation and analysis of the information that were provided by the survey participants/interviewees. Only the principal investigator (i.e. the researcher), and his promoter/supervisor – Prof GE Chiloane-Phetla had access to the password-protected computer-based record for this study. Similarly, as earlier stated, the researcher coded every participant's response with alphabets (e.g. Aaa), so that personal identifiers can be completely eliminated. Besides, respondents were guaranteed that the data generated would only be used for generalisation purposes only with no specific reference to their company name or brand in the research results/report.
- ❖ **Honesty:** The researcher provided up-to-date information about his identity as a doctoral student at the University of South Africa throughout his communication with the survey participants and interview respondents. They were also intimated that the questionnaire survey and/or interview formed a substantial part of the data gathering phase of this thesis. Furthermore, the researcher avoided the use of deceptive practices to extract information from the respondents. In fact, the data for the survey questionnaire/case study interview were collected only after briefing the respondents about why and what data is required for the study, and how it will be used by the researcher.
- ❖ **Fair and objective analysis/reporting:** Based on ethical guidelines, the researcher exercised care, fairness and objectivity during the collection, analysis, interpretation and reporting of the information that were generated during the survey and interview process. Consequently, without mincing words, the results generated/reported thereafter is an outcome of a well-planned, executed, rich, objective and in-depth analysis.

Lastly, each participating JSE's AltX CEO/director/TMT member were informed by the researcher about the reason why they were selected to take part in this study. And that their voluntary participation, confidentiality and their freedom to either withdraw from the study at any point in time and/or refuse to answer some (or any) questions due to some reservations are permitted. Likewise, they were clearly informed that the completed thesis would be made available to them free-of-charge, and that the data which was elicited from them would be stored in a password-protected file, and eventually deleted after a stipulated period of time by the University of South Africa.

## 5.20 CHAPTER SUMMARY

This chapter outlined the rationale for adopting and justifying the research philosophy, paradigm and methodology, as well as the strategies and the research design that was used in this study. This described in detail the procedures, meshing process, population sampling, participants selection strategy, data gathering tools, data preparation and analysis methods, in addition to ethical considerations taken to guarantee the integrity, validity, reliability and the authenticity of this study. Consequently, a multiphase explanatory mixed methods research design which complemented the quantitative survey questionnaire and secondary data with a qualitative case study interview was adopted in this thesis. This also culminated in the use of analytical methods, measurements techniques and scaling which ensured that both the quantitative and qualitative phases of the study were presented with appropriate statistical techniques of good research quality that can adequately test the research hypotheses that were enumerated in the introductory part of this thesis. Although a 3 level MLM equation was used to test the hypotheses in the quantitative part of this study, qualitative data was also collected and analysed through pattern matching, content analysis, as well as via data triangulation – in order to reinforce the findings from the empirical part of this research. Thus, the interpretation of results and the presentation of findings later on in the next chapter followed a logical order that revealed the rich and in-depth insights generated from the ensuing dataset.

Furthermore, this chapter specifies that the current study implemented a cross sectional data gathering/design strategy throughout this study. Interestingly, quota/judgmental purposive sampling methods were used to draw inferences/samples from the target population, which is the JSE's AltX listed companies operating in South Africa. More so, the respondents were made up of the JSE's AltX CEOs'/directors/TMT members. Expectedly, the research instrument used in this study comprised of a 5-point Likert-scale survey questionnaire supported with secondary data, and a semi-structured interview protocol. In order to ensure the accuracy of the dataset, the research instruments were pre-tested in a pilot study that was made up of 10 managers of similar profiles with the JSE's AltX CEOs'/directors/TMT members answering the survey questions, while 1 semi-structured interview was carried out too – to test the time frame and order of question format to be used thereafter. The use of a detailed procedure enhanced the overall validity and reliability of this research – which was tested with SmartPLS 3 statistical software package. In addition, out of the 60 selected participants 80 per cent responded to the survey questionnaire, while 10 participants were interviewed as planned. Finally, the quantitative data was analysed using IBM SPSS Statistics 27, and the follow up interview results were analysed thereafter using qualitative analysis

techniques. The following chapter will therefore interpret the data that was analysed, and also present its results/findings logically.

## **CHAPTER 6: EMPIRICAL RESEARCH ANALYSIS, RESULTS & FINDINGS**

### **6.1 INTRODUCTION**

This chapter builds on the previous chapter's discussion about the research design and methodology that was selected and implemented in this study. Its focal objective is to present the empirical research analysis in detail through a clear and logical display of the results obtained followed by an explanation of these findings. Concurrently, it would also be used to explore the various relationships that exist within and between the variables, in order to identify their joint and/or individual influence on this study's hypotheses.

Furthermore, the findings which emanated from the analysed data is basically a synthesised combination of respondents' opinions, the secondary data interaction indices, as well as the views of all the interviewees, literature analysis and the ensuing discussion about the impact of the JSE's AltX on listed firm's performance and entrepreneurship levels in South Africa. The chapter is made up of two main sections with section one being divided into two sub-sections comprising primary and secondary quantitative analysis and results. Matter-of-factly, in section one sub-section one, the 'survey response' (i.e. the quantitative primary analysis and results) presents the results obtained from the survey questionnaire that was administered to selected JSE's AltX CEOs/directors/TMT members. While, in section one sub-section two, the 'secondary data' (i.e. the quantitative secondary analysis and results) presents the results that was obtained from the secondary data analysis. Besides, in the qualitative analysis and results section (i.e. section two), the findings obtained from the qualitative semi-structured case study report was adroitly presented. Concomitantly, the empirical findings were also presented in a logical order for easy retrieval and comprehension. Lastly, all the datasets and analysis results were presented in a tabular format using descriptive narrations and graphs. Thereafter, the chapter ends with the closing chapter summary section.

### **6.2 SURVEY RESPONSE DATA FREQUENCIES STATISTICS**

As stated in the previous chapter, the researcher used quota/judgemental sampling to select the respondents for this study. Due to the complexities of measuring the impact that the JSE's AltX has on the performance of listed firms and entrepreneurship levels in South Africa, sixty (60) participants who were the JSE's AltX CEOs'/directors/TMT members were sent the survey questionnaires forms because of their knowledge about this phenomenon. However, 48 questionnaires were filled and returned by the respondents indicating an 80 per cent response rate. According to Lakew (2015), response rates below 50 per cent constitutes a minority opinion about a phenomenon, and having a valid response rate that is >50 per cent is considered meaningful

for statistical analysis and also imperative for an acceptable interpretation of the findings of a study. This informs the researcher's confidence in presenting the empirical findings from the analysed survey questionnaire dataset using IBM SPSS Statistics 27 statistical software package. Table 6.1 reveals the frequencies statistics for the survey data demographic information section. Out of the total 48 respondents, 35 (i.e. 73%) were males and 13 (i.e. 27%) were females. The low female participation rate follows the female TEA rate trend, which is about 10 per cent in South Africa (GEM. 2020). This explains the reason why the NDP report considers poverty and racial/gender inequality a vital issue that needs to be tackled head-long in South Africa (Alexander, 2017). Furthermore, most of the survey questionnaire respondents (i.e. 18 of them) had over 10 years directorship level experience representing 38% of the total sample, 14 (29%) respondents had under 2 years of directorship level experience, 8 (17%) had between 2 to 5 years directorship level experience, while 7 (15) had between 6 to 10 years directorship level experience. However, there was 1 missing (i.e. representing 2.1 valid per cent) response in this category. This is consistent with the fact that most of the JSE's AltX CEOs, directors and TMT members are experienced professionals who are passionate about building high-growth successful businesses that can push the nation towards a sustainable path of prosperity.

Thereafter, the researcher sought to determine the level of educational experience of the respondents in order to ascertain whether the respondents have a minimum level of training, as well as the intellectual capacity to comprehend and opine on issues related to the impact that the JSE's AltX has on listed firm's performance and entrepreneurship in South Africa. This would definitely improve the trustworthiness of their answers, and also increase the reliability of the study. 22 respondents (i.e. 46%) reported that they are degree holders. While, 14 (i.e. 29%) and 2 (i.e. 4%) of the respondents reported that they have post-graduate degrees yielding a sum total of 16 or 33% of the respondents claiming to have advanced degrees such as Master's degree and PhD respectively. Likewise, 6 (i.e. 13%) and 4 (i.e. 8%) of the respondents reported that they are certificate and diploma holders respectively. Consequently, based on the educational attainment of the respondents, the researcher confirmed that all the survey questionnaire participants have the requisite qualification, academic exposure and know-how to freely give a fair and informed response in this field of study. Going further, the problem of racial and economic inequality is a very contentious issue in South Africa, and forms a substantial part of the NDP diagnostic report (Alexander, 2017). Leadership Online (2018) magazine B-BBEE commission report reaffirms that black representation on the boards of the JSE's listed entities constitute only about 38 per cent of board membership in South Africa despite blacks comprising of about 81 per cent of the total population. This motivated the researcher to form

**Table 6.1 Frequencies statistics for the survey data demographic information section**

	N		Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing												
Gender	48	0	0.73	0.065	1	1	0.449	0.202	-1.065	0.343	-0.905	0.674	0	1
Dexp	47	1	2.62	0.186	3	4	1.278	1.633	-0.142	0.347	-1.693	0.681	1	4
EduL	48	0	3.04	0.149	3	3	1.031	1.062	-0.573	0.343	0.017	0.674	1	5
EthnicG	48	0	3.17	0.147	3	4	1.018	1.035	-1.107	0.343	0.156	0.674	1	4
Sector	48	0	2.42	0.293	2	2	2.03	4.121	0.628	0.343	-0.227	0.674	0	7
ForeignExp	48	0	0.46	0.073	0	0	0.504	0.254	0.173	0.343	-2.058	0.674	0	1
WorkAbroad	26	22	1.73	0.18	1.5	1	0.919	0.845	1.26	0.456	1.023	0.887	1	4
EmployeesN	48	0	2.67	0.187	2.5	4	1.294	1.674	-0.139	0.343	-1.744	0.674	1	4
Location	48	0	2.23	0.221	1	1	1.533	2.351	0.262	0.343	-1.875	0.674	0	4
Exports	48	0	0.52	0.073	1	1	0.505	0.255	-0.086	0.343	-2.081	0.674	0	1
ExportsL	30	18	2.87	0.224	3	4	1.224	1.499	-0.454	0.427	-1.462	0.833	1	4
ExpanPlan	44	4	2.41	0.322	1	1	2.138	4.573	0.737	0.357	-1.117	0.702	0	6

*N* = 48, *Gender* Male = 1, Female = 0, *Dexp* Years of directorship level experience, Under 2 years = 1, 2 to 5 years = 2, 6 to 10 years = 3, Over 10 years = 4, *EduL* level of education (i.e. highest academic qualification obtained) Others = 0, Certificate = 1, Diploma = 2, Degree = 3, Masters = 4, PhD = 5, *EthnicG* Ethnic group, Black African = 4, White = 3, Coloured = 2, Indian or Asian = 1, Other = 0, *Sector* Other = 0, Construction and materials sector = 1, Finance and services sector = 2, General industrials sector = 3, Mobile telecommunications & technology sector = 4, Mining & steel sector = 5, Travel & leisure sector = 6, Pharmaceuticals, biotechnology & health sector = 7, *ForeignExp* Foreign Experience, Yes = 1, No = 0, *WorkAroad* Under 2 years = 1, 2 to 5 years = 2, 6 to 10 years = 3, Over 10 years = 4, *EmployeesN* Number of employees, Less than 20 = 1, 20 to 100 = 2, 100 to 200 = 3, 200 and above = 4, *Location* Other = 0, City centre = 1, Township = 2, Rural area = 3, Suburb = 4, *Exports* Yes = 1, No = 0, *ExportsL* Under 2 years = 1, 2 to 5 years = 2, 6 to 10 years = 3, Over 10 years = 4, *ExpanPlan* Expansion plans, Other = 0, Increase production and/or service base = 1, Open new branches = 2, Franchising = 3, Exporting through foreign affiliation = 4, Joint ventures = 5, Mergers and Acquisitions (M&A) = 6.



An ethnic group classification in the survey questionnaire. From the dataset, 23 (i.e. 48%) of the respondents disclosed that they were Black Africans, 16 (i.e. 33%) of the respondents stated that they were Whites, 6 (i.e. 13%) of the respondents revealed that they were Indians or of Asian descent, while only 3 (i.e. 6%) of the respondents reported that they were from the Coloured racial group. Since, the B-BBEE legislation is geared towards engaging the predominantly black population in the productive process, the respondent demographics adequately caters for a fair and balanced perception of the impact of the JSE's AltX on listed firm's performance and entrepreneurship in South Africa, given the nuances of this new legislation.

For the entire society to resolve the wicked problems confronting South Africa, there is need to create sufficient jobs in the economy. However, this can only be possible if the private sector engages all sectors of the South African economy in an all-encompassing manner. Therefore, the researcher sought to infer about the various sectors where the respondents work, in order to find out more insightful information about the impact that the JSE's AltX has on listed firm's performance and entrepreneurship bearing in mind different sectors point of view. Most of the respondents (i.e. 14 participants or 29%) reported that they worked in the finance and services sector, 7 (i.e. 15%) of the respondents reported that they worked in the mobile telecommunications & technology sector, 5 (i.e. 10%) of the respondents divulged that they worked in the General industrials sector. 3 (i.e. 6%) of the respondents stated that they worked for either the construction and materials sector or the mining & steel sector or the pharmaceuticals, biotechnology & health sectors of the economy, 1 (i.e. 2%) of the respondents reported that they worked in the travel & leisure sector, while 12 (i.e. 25%) of the respondents submitted that they worked in other sectors of the economy. Furthermore, in order to ascertain the impact of clustering in the variables, the *Sector* variable was chosen as a Level 2 variable in the 3-Level MLM econometric equation because apart from its significance in the model, it had a *mean* of 2.42 with its *standard error of mean* of 0.293, which also has the second largest *standard deviation* (i.e. 2.03) and *skewness* (0.628) in the entire demographic information section of the survey questionnaire. Consequently, the researcher wanted to find out if there exist evidence of clustering in the dataset, and if the within and between variation caused by the *Sector* variable was significant (or not) to produce biases in the parameter estimates and standard errors, thus making a 1-Level equation estimation spurious.

Next, respondents were asked to indicate whether they have foreign experience or not. 26 (i.e. 54%) of the respondents reported that they did not have foreign work experience which implies that they have only local experience in South Africa. While 22 (i.e. 46%) of the respondents pointed out that they had foreign or international work experience in other countries. In SME

internationalisation literature, it has been proven that most business owners and managers that had foreign work experience either sell their products or services abroad or intend to do so within a short period of time (Lakew, 2015). Similarly, most of the respondents (i.e. 13 participants or 27%) reported that they have under 2 years work abroad experience, 9 or 19% of the respondents stated that they have between 2 to 5 years work abroad experience, while 2 or 4% of the respondents agreed that they either have between 6 to 10 years of work abroad experience or over 10 years international experience. Numerous studies have measured the performance of both small and large companies based on several indicators such as turnover or revenue, total assets value, taxes paid and the number of employees (The Banking Association South Africa, 2017). Consequently, using the definition of SMEs provided in Table 3.1 of Chapter 3, the researcher added a section in the survey questionnaire to measure the number of employees in all the respondent's firms, in order to identify the size of the survey participants' companies. 21 (i.e. 44%) of the respondents reported that they worked in a company that has 200 and above number of employees, 13 or 27% of the respondents stated that they were working in a company with less than 20 staffs, 11 or 23% submitted that they worked in a company with around 20 to 100 number of employees. While, 3 or 6% of the respondents agreed that they worked in a firm operating with about 100 to 200 total number of employees.

Apartheid has a long string in South Africa since the White minority government legally forbade unlawful racial intercourse in 1949. This became law under the immoral or indecent act that later turned into a full-scale system of institutionalised racial segregation. By implication this policy implied that the social, political and economic structure of South Africa leaned towards her White citizens at the upper echelon of the society, followed by Asian settlers, the outlawed and marginalised Coloureds, which was shadowed by the indigenous Black population. Unsurprisingly, the effects of South Africa's apartheid legacy exist till date. Hence, this led to a drift in the socioeconomic status of its citizens based on the mobility of labour and neighbourhoods or abode (EY, 2013). This was why the ED code 600 with the main objective of supporting and growing emerging black owned businesses was enacted in the first place. In a bid to check the non-inclusive structure of the Apartheid regime, the NDP was instituted to reduce inequality, eliminate poverty and link divided communities with a goal to unite South Africans. Despite keying into the vision of the JSE's AltX to support young, black and high growth businesses on the exchange (JSE, 2020), it would be indeed a futile endeavour if these companies do not have a geographical spread nationwide given the current arrangement in the country. Thus, the researcher included the location section in the survey questionnaire to probe deep into the outreach of these listed firms, as well as

to determine if there was an association between location and the performance of the JSE's AltX listed firms and entrepreneurship levels in South Africa.

The frequencies statistics of the survey data revealed that most of the respondents' company location was in city centres. This is based on the valid percentage figure of 52% or 25 of the survey participants who reported that their firm operated from a city centre location. While, 20 or 42% of the respondents stated that their company was located in a Suburb area. Also, 1 or 2% of the respondents divulged that their company operated in a Township location, just like 2 or 4% of the respondents who reported that their company operated in other locations. The *Location* variable or parameter have a *mean* of 2.23, *standard error of mean* of 0.221, *standard deviation* of 1.533, variance of 2.351 and *skewness* of 0.262 which is the third largest in the demographic information section behind *ExpanPlan* representing expansion plan and the *Sector* variable item. Consequently, the researcher decided to select the Location variable as the Level 3 parameter in the 3-Level MLM econometric equation given the aforementioned points and evidence of clustering, as well as the between and within effects that might arise as a result of this indicator variable in the survey questionnaire.

Contemporary studies have measured firm performance using various indicators. One new approach is to ascertain the level of exports of a company. This shows a company's resilience, age, robustness and global focus renowned for being a major characteristic of small transitioning firms and large multinational corporations. In the survey questionnaire *Exports* section was included to determine the percentage of companies that were selling either their products or services internationally. This has been found to diversify the revenue base of these firms, reduced their country risks and helped to generate a foreign currency denominated income portfolio for them, simultaneously. 25 or 52% of the respondents reported that their companies exported their products or services to other countries, while 25 or 48% of the respondents stated that their companies did not sell their products or services in foreign countries. Furthermore, 14 or 29% of the respondents reported that their company have been exporting their products or services for over 10 years or more. 6 or 13% of the respondents reported that their firms have been exporting products or services overseas for under 2 years or 2 to 5 years. While 4 or 8% of the respondents stated that they have between 6 to 10 years of exporting experience. The researcher found out that 5 more respondents attested that their companies did actually export their products or services (perhaps or albeit indirectly) given the fact that they answered no in the previous section. The *ExportL* (i.e. export length) section helped the researcher to measure the duration of the respondent's firm international exposure across-the-board.

Intent to expand is also considered important in entrepreneurship, SME and small business development literature. It is the concrete plan or action taken as a precursor to firm internationalisation. This is based on the strategic goals of a company. The JSE's AltX was set up to unleash the potentials of SMEs through capital injection schemes that would trigger firm growth to unprecedented levels (JSE, 2020). Hence, the expansion plan of a company can occur over a short-term period (i.e. under one year), or a medium-term period (i.e. between one to three years) or over a long-term period (i.e. over three years or more). This motivated the researcher to create an *ExpanPlan* (i.e. expansion plan) section in the survey questionnaire. From the frequencies statistics table, it was observed by the researcher that almost all the respondent companies had an expansion plan in place. In fact, 19 (i.e. 40%) of the respondents submitted that their company planned to increase production and/or service base. 7 or 15% of the respondents agreed that their company intended to expand via mergers and acquisitions (M&A), 6 or 13% of the respondents stated that their firm was planning to open new branches, while 5 or 10% reported that their company was considering joint ventures with other companies. Similarly, 2 or 4% of the respondents divulged that their company was planning to export its products or services through foreign affiliation, and 5 or 10% of the respondents reported that their company was considering other expansion plans. Lastly, the demographic information section of the survey questionnaire was able to lay bare the profiles of all the respondents and their affiliated companies, which is of great interest to the researcher.

### 6.3 CORRELATION STATISTICS FOR THE SURVEY RESPONSE

The Spearman's rank  $\rho$  correlation coefficient depicted in Table 6.2 is a nonparametric monotonic function that measures the relationship two variables. High correlation is close to or equal to 1, while low correlation is near or equal to 0 (Richardson, 2015). Similarly, a positive correlation coefficient denotes an increasing monotonic trend between two variables, a negative correlation coefficient signifies a declining monotonic trend between two variables (Corder and Foreman 2014). For the survey response, the interpretation of the results indicates a fair degree of correlation between the variables, yet, even though a correlation coefficient of 0.75 and above is considered high, a correlation coefficient of 0.36 and below might also be considered too low. Several scholars have linked high correlation as evidence of multicollinearity, such conclusions should not be in a haste because some disciplines like medical research assumes that high correlation coefficients indicate a good fit and accuracy in a dataset. Given that validity and reliability tests have been conducted successfully, omitting any suspicious variable relationships could lead to biased estimates which informs the use of MLM testing in this thesis.

**Table 6.2 Descriptive statistics and correlations for the survey response**

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Item2a	2.79	1.13	1.00	0.86***	0.77***	0.55***	0.76***	0.23	0.44**	0.29*	0.26	0.49***	0.42**	0.33*	0.39**	0.25
2 Item2b	2.81	1.23	0.86***	1.00	0.77***	0.57***	0.76***	0.29*	0.45***	0.32*	0.34*	0.44**	0.45***	0.28	0.36*	0.25
3 Item2c	3.29	1.30	0.77***	0.77***	1.00	0.68***	0.68***	0.42**	0.43**	0.36*	0.35*	0.49***	0.44**	0.45***	0.44**	0.30*
4 Item2d	3.35	1.19	0.55***	0.57***	0.68***	1.00	0.60***	0.57***	0.57***	0.51***	0.21	0.55***	0.39**	0.33*	0.36*	0.38**
5 Item2e	2.96	1.11	0.76***	0.76***	0.68***	0.60***	1.00	0.32*	0.50***	0.43**	0.31*	0.55***	0.49***	0.42**	0.31*	0.19
6 Item2f	3.65	1.10	0.23	0.29*	0.42**	0.57***	0.32*	1.00	0.24	0.14	-0.01	0.35*	0.07	0.17	0.29*	0.20
7 Item2g	3.21	1.04	0.44**	0.45***	0.43**	0.57***	0.50***	0.24	1.00	0.42**	0.20	0.45**	0.39**	0.30*	0.24	0.44**
8 Item3a	3.29	1.01	0.29*	0.32*	0.36*	0.51***	0.43**	0.14	0.42**	1.00	0.58***	0.58***	0.58***	0.37**	0.39**	0.58***
9 Item3b	3.25	1.10	0.26	0.34*	0.35*	0.21	0.31*	-0.01	0.20	0.58***	1.00	0.49***	0.45***	0.34*	0.41**	0.48***
10 Item3c	3.25	1.06	0.49***	0.44**	0.49***	0.55***	0.55***	0.35*	0.45**	0.58***	0.49***	1.00	0.60***	0.42**	0.52***	0.59***
11 Item3d	3.29	0.99	0.42**	0.45***	0.44**	0.39**	0.49***	0.07	0.39**	0.58***	0.45***	0.60***	1.00	0.39**	0.60***	0.54***
12 Item3e	3.35	0.98	0.33*	0.28	0.45***	0.33*	0.42**	0.17	0.30*	0.37**	0.34*	0.42**	0.39**	1.00	0.36*	0.32*
13 Item3f	3.38	0.98	0.39**	0.36*	0.44**	0.36*	0.31*	0.29*	0.24	0.39**	0.41**	0.52***	0.60***	0.36*	1.00	0.58***
14 Item3g	3.42	0.94	0.25	0.25	0.30*	0.38**	0.19	0.20	0.44**	0.58***	0.48***	0.59***	0.54***	0.32*	0.58***	1.00
15 Item4a	2.89	1.13	0.25	0.27	0.29*	0.28	0.25	0.31*	-0.12	0.04	-0.03	0.06	0.18	0.27	0.21	0.03
16 Item4b	3.23	1.13	0.45**	0.43**	0.46***	0.54***	0.50***	0.31*	0.24	0.40**	0.02	0.36*	0.33*	0.51***	0.16	0.27
17 Item4c	3.06	0.96	0.69***	0.69***	0.63***	0.54***	0.68***	0.24	0.39**	0.42**	0.30*	0.58***	0.59***	0.46***	0.50***	0.38**
18 Item4d	3.15	1.20	0.53***	0.51***	0.47***	0.50***	0.53***	0.40**	0.15	0.19	0.05	0.41**	0.41**	0.37**	0.36*	0.13
19 Item4e	3.15	1.22	0.56***	0.61***	0.63***	0.57***	0.52***	0.49***	0.26	0.32*	0.16	0.53***	0.42**	0.41**	0.37**	0.24
20 Item4f	3.19	1.24	0.58***	0.51***	0.50***	0.52***	0.57***	0.39**	0.22	0.37**	0.21	0.52***	0.48***	0.42**	0.46***	0.28
21 Item4g	3.17	1.17	0.33*	0.41**	0.37**	0.34*	0.48***	0.16	0.30*	0.49***	0.35*	0.43**	0.47***	0.51***	0.32*	0.34*
22 Item5a	3.65	1.08	0.01	-0.06	0.11	0.29*	0.05	0.17	0.21	0.15	-0.01	0.33*	0.29*	0.28	0.15	0.26
23 Item5b	2.98	1.09	0.27	0.36*	0.37**	0.42**	0.31*	-0.05	0.43**	0.41**	0.34*	0.43**	0.53***	0.25	0.26	0.28
24 Item5c	3.02	1.13	0.23	0.17	0.18	0.39**	0.38**	0.00	0.41**	0.40**	0.17	0.47***	0.48***	0.18	0.33*	0.27
25 Item5d	3.11	1.15	0.37*	0.41**	0.35*	0.45**	0.37*	0.20	0.30*	0.54***	0.44**	0.54***	0.64***	0.26	0.68***	0.37*
26 Item5e	3.77	0.96	0.34*	0.31*	0.26	0.35*	0.39**	0.38**	0.34*	0.19	0.09	0.38**	0.20	0.35*	0.33*	0.37*
27 Item5f	3.11	1.14	0.30*	0.33*	0.26	0.25	0.26	0.10	0.23	0.40**	0.23	0.35*	0.47***	0.15	0.52***	0.36*
28 Item5g	3.40	1.12	0.09	0.08	0.04	0.20	0.13	0.03	0.38**	0.28	0.02	0.23	0.22	0.16	0.17	0.38**

**Table 6.2 Descriptive statistics and correlations for the survey response (cont.)**

	Variables	Mean	SD	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1	Item2a	2.79	1.13	0.25	0.45**	0.69***	0.53***	0.56***	0.58***	0.33*	0.01	0.27	0.23	0.37*	0.34*	0.30*	0.09
2	Item2b	2.81	1.23	0.27	0.43**	0.69***	0.51***	0.61***	0.51***	0.41**	-0.06	0.36*	0.17	0.41**	0.31*	0.33*	0.08
3	Item2c	3.29	1.30	0.29*	0.46***	0.63***	0.47***	0.63***	0.50***	0.37**	0.11	0.37**	0.18	0.35*	0.26	0.26	0.04
4	Item2d	3.35	1.19	0.28	0.54***	0.54***	0.50***	0.57***	0.52***	0.34*	0.29*	0.42**	0.39**	0.45**	0.35*	0.25	0.20
5	Item2e	2.96	1.11	0.25	0.50***	0.68***	0.53***	0.52***	0.57***	0.48***	0.05	0.31*	0.38**	0.37*	0.39**	0.26	0.13
6	Item2f	3.65	1.10	0.31*	0.31*	0.24	0.40**	0.49***	0.39**	0.16	0.17	-0.05	0.00	0.20	0.38**	0.10	0.03
7	Item2g	3.21	1.04	-0.12	0.24	0.39**	0.15	0.26	0.22	0.30*	0.21	0.43**	0.41**	0.30*	0.34*	0.23	0.38**
8	Item3a	3.29	1.01	0.04	0.40**	0.42**	0.19	0.32*	0.37**	0.49***	0.15	0.41**	0.40**	0.54***	0.19	0.40**	0.28
9	Item3b	3.25	1.10	-0.03	0.02	0.30*	0.05	0.16	0.20	0.35*	-0.01	0.34*	0.17	0.44**	0.09	0.23	0.02
10	Item3c	3.25	1.06	0.06	0.36*	0.58***	0.41**	0.53***	0.52***	0.43**	0.33*	0.43**	0.47***	0.54***	0.38**	0.35*	0.23
11	Item3d	3.29	0.99	0.18	0.33*	0.59***	0.41**	0.42**	0.48***	0.47***	0.29*	0.53***	0.48***	0.64***	0.20	0.47***	0.22
12	Item3e	3.35	0.98	0.27	0.51***	0.46***	0.37**	0.41**	0.42**	0.51***	0.28	0.25	0.18	0.26	0.35*	0.15	0.16
13	Item3f	3.38	0.98	0.21	0.16	0.50***	0.36*	0.37**	0.46***	0.32*	0.15	0.26	0.33*	0.68***	0.33*	0.52***	0.17
14	Item3g	3.42	0.94	0.03	0.27	0.38**	0.13	0.24	0.28	0.34*	0.26	0.28	0.27	0.37*	0.37*	0.36*	0.38**
15	Item4a	2.89	1.13	1.00	0.57***	0.48***	0.64***	0.57***	0.49***	0.23	0.04	0.08	0.03	0.12	0.14	0.15	-0.03
16	Item4b	3.23	1.13	0.57***	1.00	0.72***	0.77***	0.72***	0.69***	0.60***	0.37*	0.33*	0.25	0.17	0.34*	0.21	0.27
17	Item4c	3.06	0.96	0.48***	0.72***	1.00	0.79***	0.68***	0.61***	0.56***	0.16	0.44**	0.38**	0.48***	0.32*	0.43**	0.17
18	Item4d	3.15	1.20	0.64***	0.77***	0.79***	1.00	0.79***	0.73***	0.59***	0.22	0.31*	0.26	0.38**	0.33*	0.31*	0.20
19	Item4e	3.15	1.22	0.57***	0.72***	0.68***	0.79***	1.00	0.73***	0.61***	0.23	0.29	0.13	0.40**	0.45**	0.37*	0.17
20	Item4f	3.19	1.24	0.49***	0.69***	0.61***	0.73***	0.73***	1.00	0.54***	0.40**	0.33*	0.32*	0.43**	0.49***	0.30*	0.21
21	Item4g	3.17	1.17	0.23	0.60***	0.56***	0.59***	0.61***	0.54***	1.00	0.09	0.28	0.07	0.21	0.29*	0.20	0.33*
22	Item5a	3.65	1.08	0.04	0.37*	0.16	0.22	0.23	0.40**	0.09	1.00	0.52***	0.67***	0.30*	0.54***	0.19	0.53***
23	Item5b	2.98	1.09	0.08	0.33*	0.44**	0.31*	0.29	0.33*	0.28	0.52***	1.00	0.66***	0.51***	0.19	0.31*	0.43**
24	Item5c	3.02	1.13	0.03	0.25	0.38**	0.26	0.13	0.32*	0.07	0.67***	0.66***	1.00	0.63***	0.42**	0.45**	0.52***
25	Item5d	3.11	1.15	0.12	0.17	0.48***	0.38**	0.40**	0.43**	0.21	0.30*	0.51***	0.63***	1.00	0.36*	0.64***	0.30*
26	Item5e	3.77	0.96	0.14	0.34*	0.32*	0.33*	0.45**	0.49***	0.29*	0.54***	0.19	0.42**	0.36*	1.00	0.37*	0.53***
27	Item5f	3.11	1.14	0.15	0.21	0.43**	0.31*	0.37*	0.30*	0.20	0.19	0.31*	0.45**	0.64***	0.37*	1.00	0.39**
28	Item5g	3.40	1.12	-0.03	0.27	0.17	0.20	0.17	0.21	0.33*	0.53***	0.43**	0.52***	0.30*	0.53***	0.39**	1.00

Spearman's rho Correlation; N = 48; SD = Standard Deviation; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

#### 6.4.1 SURVEY RESPONSE HYPOTHESIS 1 FREQUENCIES STATISTICS

Given that one of the purposes of this study deals with the conceptual identification of the operational processes of the JSE's AltX. The researcher intends to answer the research question "Does listing on the JSE's AltX impact on firm performance?" through the determination of the impact that the JSE's AltX has on listed firm's performance. This led to the formulation of Hypothesis 1: Firms that are listed on the JSE's AltX are less likely to perform better than unlisted SMEs. Part II of the survey questionnaire tried to ascertain this impact via the responses of participants in this section. In Table 6.3 the frequencies statistics for the survey response in hypothesis 1 was presented. For *Item2a* "Registering on the lower bourse helped to improve my company performance" 2 or 4% of the respondents strongly agreed, 12 or 25% of the respondents agreed, 16 or 33% of the respondents were undecided, 10 or 21% of the respondents disagreed, while 8 or 17% of the respondents strongly disagreed about the impact of the JSE's AltX in this critical area. The *mean* (2.79), *standard error of mean* (0.163) and *standard deviation* (1.129) of *Item2a* indicated that the average response leaned slightly towards the neutral from a negative angle with a low level of variation. Next, for *Item2b* "Listing on the AltX facilitated the growth of the company's revenue base and enhanced the level of firm profitability" 5 or 10% of the respondents strongly agreed, 8 or 17% of the respondents agreed, 17 or 35% of the respondents were undecided, while 9 or 19% of the respondents either disagreed or strongly disagreed about the impact of the JSE's AltX in this contentious part. The *mean* (2.81), *standard error of mean* (0.178) and *standard deviation* (1.232) of *Item2b* specified that the average response leaned a little bit in the direction of the neutral from a negative position with a small disparity.

Furthermore, for *Item2c* "Many stakeholders became more confident when transacting with our company" 10 or 21% of the respondents strongly agreed, 12 or 25% of the respondents agreed, 15 or 31% of the respondents were undecided, 4 or 8% of the respondents disagreed, while 7 or 15% of the respondents strongly disagreed about the impact of the JSE's AltX in this crucial area. The *mean* (3.29), *standard error of mean* (0.188) and *standard deviation* (1.304) of *Item2c* indicated that the average response leaned away from the neutral towards a positive perspective with a low level of variation. Subsequently, for *Item2d* "Listing increased the level of media publicity and raised the profile of our organisation both locally and internationally" 6 or 13% of the respondents either strongly agreed or disagreed, 21 or 44% of the respondents agreed, 11 or 23% of the respondents were undecided, while 4 or 8% of the respondents disagreed about the impact of the JSE's AltX in this vital section. The *mean* (3.35), *standard error of mean* (0.172) and *standard*

**Table 6.3 Survey response hypothesis 1 frequencies statistics**

	N		Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing												
Item2a	48	0	2.79	0.163	3	3	1.129	1.275	-0.125	0.343	-0.828	0.674	1	5
Item2b	48	0	2.81	0.178	3	3	1.232	1.517	0.088	0.343	-0.771	0.674	1	5
Item2c	48	0	3.29	0.188	3	3	1.304	1.7	-0.392	0.343	-0.756	0.674	1	5
Item2d	48	0	3.35	0.172	4	4	1.194	1.425	-0.735	0.343	-0.278	0.674	1	5
Item2e	48	0	2.96	0.16	3	3	1.11	1.232	-0.012	0.343	-0.57	0.674	1	5
Item2f	48	0	3.65	0.159	4	4	1.101	1.212	-0.637	0.343	-0.223	0.674	1	5
Item2g	47	1	3.21	0.152	3	4	1.041	1.084	-0.69	0.347	-0.266	0.681	1	5
AltXeffect	48	0	3.15	0.134	3.143	3	0.923	0.865	-0.301	0.343	-0.414	0.674	1	4.86

*N* = 48, *Item2a* Registering on the lower bourse helped to improve my company performance, *Item2b* Listing on the AltX facilitated the growth of the company's revenue base and enhanced the level of firm profitability, *Item2c* Many stakeholders became more confident when transacting with our company, *Item2d* Listing increased the level of media publicity and raised the profile of our organisation both locally and internationally, *Item2e* Registering on the junior exchange helped to attract and retain skilled talent that can assist in achieving firm goals, *Item2f* Listing aided the development of a good record keeping culture in the company that complies with existing regulation, *Item2g* The combination of miscellaneous factors caused an improved performance of firm operations, *AltXeffect* Impact of firm listing on the JSE's AltX.



*Deviation* (1.194) of *Item2d* indicated that the average response leaned from the neutral level towards an optimistic viewpoint with a low variance. Next, for *Item2e* “Registering on the junior exchange helped to attract and retain skilled talent that can assist in achieving firm goals” 4 or 8% of the respondents strongly agreed, 11 or 23% of the respondents either agreed or disagreed, 17 or 35% of the respondents were undecided, while 5 or 10% of the respondents strongly disagreed about the impact of the JSE’s AltX in this important area. The *mean* (2.96), *standard error of mean* (0.160) and *standard deviation* (1.110) of *Item2e* indicated that the average response leaned slightly towards the neutral from a negative angle with a low level of variation.

Afterwards, for *Item2f* “Listing aided the development of a good record keeping culture in the company that complies with existing regulation” 11 or 23% of the respondents strongly agreed, 19 or 40% of the respondents agreed, 10 or 21% of the respondents were undecided, 6 or 13% of the respondents disagreed, while 2 or 4% of the respondents strongly disagreed about the impact of the JSE’s AltX in this critical section. The *mean* (3.65), *standard error of mean* (0.159) and *standard deviation* (1.101) of *Item2f* indicated that the average response was positive with a low level of variance. Then, for *Item2g* “The combination of miscellaneous factors caused an improved performance of firm operations” 2 or 4% of the respondents strongly agreed, 21 or 44% of the respondents agreed, 13 or 27% of the respondents were undecided, 7 or 15% of the respondents disagreed, while 4 or 8% of the respondents strongly disagreed about the impact of the JSE’s AltX in this critical area. There was however 1 missing response in this section representing about 2% of the total participant’s responses. The *mean* (3.21), *standard error of mean* (0.152) and *standard deviation* (1.041) of *Item2g* indicated that the average response leaned slightly from the neutral point towards a positive perspective with a low level of variability.

Objectively, the researcher was primarily concerned with ascertaining the benefits or otherwise of listing on the JSE’s AltX. It was anticipated that this advantage would be of varying significance based on the industrial sector where these firms operate in. Consequently, the dependent variable *AltXeffect* was designed to capture the impact of firm listing on the JSE’s AltX. This construct had a positive *mean* of 3.15, *standard error of mean* of 0.134 and *standard deviation* of 0.923. The MLM econometrics analysis implemented in the next section is expected to identify the within and between relationships/variation amongst these parameters. Principally, this would assist the researcher in providing deep insights about the desired level of support (based on the ensuing effect) that is expected to be provided by the JSE’s AltX to listed high growth firms.

### 6.4.2 HYPOTHESIS 1 SURVEY RESPONSE MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.4 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 1 with *AltXeffect* i.e. impact of firm listing on the JSE's AltX as the dependent variable. Model 1 of Table 6.4 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of firm listing on the JSE's AltX. Since no predictors were included in the model at Level 1, the intercept is equal to the *AltXeffect* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of firm listing on the JSE's AltX by 3.147. This can be further illustrated using the test ( $t$ ) statistic, which is presented as  $t$  (degrees of freedom) =  $t$  statistic,  $p = p$  value.

**Table 6.4 Hypothesis 1 MLM equation for the survey response**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
$\beta_0$	3.147*** (0.133)	1.815*** (0.354)	1.813*** (0.356)	1.614*** (0.323)	1.583*** (0.446)
Item2a		0.429*** (0.082)	0.452*** (0.082)	0.484*** (0.096)	0.448*** (0.130)
Item2b		-0.315*** (0.069)	-0.329*** (0.068)	-0.315*** (0.068)	-0.363*** (0.079)
Item2c		-0.027 (0.075)	-0.023 (0.074)	-0.038 (0.067)	-0.013 (0.074)
Item2d		0.154 (0.080)	0.166* (0.078)	0.190** (0.066)	0.234** (0.074)
Item2e		-0.063 (0.077)	-0.067 (0.075)	-0.091 (0.086)	-0.035 (0.078)
Item2f		0.194* (0.083)	0.181* (0.082)	0.191* (0.080)	0.145 (0.079)
Item2g		0.081 (0.081)	0.063 (0.081)	0.063 (0.077)	0.111 (0.090)
$\sigma_e^2$	0.847*** (0.173)	0.321*** (0.066)	0.309*** (0.065)	0.188*** (0.045)	0.196*** (0.000)
$\sigma_v^2$	2.64e-19 (5.97e-18)		0.014 (0.032)	0.019 (0.028)	0.027 (0.074)
$\sigma_u^2$	1.52e-17 (1.84e-16)	1.33e-31 (2.41e-30)	5.52e-20 (6.99e-19)	0.019 (0.032)	0.033 (0.187)
$\sigma_v^2 \times \sigma_u^2$				0.000 (0.000)	0.001 (0.000)
Log-likelihood	-64.11	-40.87	-40.68	90.08	90.81
Deviance	128.23	81.74	81.36	-180.15	-181.62
AIC	134.23	101.74	103.36	126.08	136.81
Fixed effects	No	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes

$N = 48$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX variables,  $\sigma_u^2$  the level two variance i.e. sector,  $\sigma_v^2$  the level three variance i.e. location, *AIC* Akaike's Information Criterion. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

This implies that the respondents agreed that ( $M = 3.147$ ,  $SE = 0.133$ ) the impact of firm listing on the JSE's AltX is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(48) = 23.699$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 contains estimated within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positively significant at all levels, however, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Levels 2 and 3. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -64.11 with a *deviance* statistic of 128.23, while its *Akaike's Information Criterion (AIC)* was 134.23, which makes a lot of sense in the following model analysis.

Next, Model 2 of Table 6.4 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = -40.87, *deviance* = 81.74, *AIC* = 101.74, *Wald chi2(7)* = 78.41,  $p < 0.001$ ). Hence, the results from Hypothesis 1 tests indicated that firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs. This is consistent with findings from similar studies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of 81.74 against 238.82 and 134.23 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 1.815 ( $SE$  0.354,  $p < 0.001$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 1.815 in the performance of listed firms on the JSE's AltX. That said, as expected registering on the lower bourse helped to improve company performance, since the coefficient  $\beta_1$  (0.452) of *Item2a* was positive and significant ( $SE = 0.082$ ,  $p < 0.001$ ). However, surprisingly, listing on the AltX (*Item2b*) had a negative and significant effect on a company's revenue base and its level of firm profitability ( $\beta_2 = -0.315$ ,  $SE = 0.069$ ,  $p < 0.001$ ). Probably, this is due to the fact that numerous listed firms have pointed out that the major problem of listing is the high fixed cost base relating to listing and compliance matters (e.g. B-BBEE enforcement regulation), which make inefficient companies not to be able to reduce or even contain costs (Killick, 2008; Giyani Gold, 2016).

Furthermore, predictably, listing aided the development of a good record keeping culture in these firms in compliance with existing regulation. Consequently, any 1-unit increase in the coefficient of *Item2f* ( $\beta_6$ ) would lead to a 0.194 times positive impact on firm performance for SMEs that are listed on the JSE's AltX ( $SE = 0.083$ ,  $p < 0.05$ ). Also, there was evidence of within-group variation in Model 2 with residual estimate of 0.321 ( $SE = 0.066$ ;  $p < 0.001$ ). Subsequently, in Model 3 of Table 6.4 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were similar to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 1 was fully supported ( $\log likelihood = -40.68$ ,  $deviance = 81.36$ ,  $AIC = 103.36$ ,  $Wald\ chi2(7) = 82.65$ ,  $p < 0.001$ ). The coefficient of the intercept  $\beta_0$  (1.813) was positive and significant ( $SE = 0.356$ ,  $p < 0.001$ ), the coefficient of the *Item2a*  $\beta_1$  (0.452) was positive and significant ( $SE = 0.082$ ,  $p < 0.001$ ), while the coefficient of the *Item2b*  $\beta_2$  (-0.329) was negative and significant ( $SE = 0.068$ ,  $p < 0.001$ ). Also, just like the previous model, the coefficient of the *Item2f*  $\beta_6$  (0.181) was positive and significant ( $SE = 0.082$ ,  $p < 0.05$ ). However, the researcher observed that listing helped the JSE's AltX listed companies to boost their media publicity levels (*Item2d*), investor awareness, as well as the corporate profile of these organisations both locally and internationally ( $\beta_4 = 0.166$ ,  $SE = 0.078$ ,  $p < 0.05$ ). This is consistent with the findings of prior studies (Moolman, 2004; Mashaba, 2014; Heerden, 2015). Likewise, there was evidence of within-group variation in Model 3 with its residual estimate of 0.309 ( $SE = 0.065$ ;  $p < 0.001$ ) being very positive and significant.

Interestingly, Model 3's report was more robust than both Model 2 and 1 given its low  $\log likelihood$  and  $deviance$  statistic. Nevertheless, the  $AIC$  was slightly higher than Model 2's report, perhaps because it penalises the goodness of fit statistics data when any additional variable is added to a model. Afterwards, in Model 4 of Table 6.4 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 1's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = 90.08$ ,  $deviance = -180.15$ ,  $AIC = 126.08$ ,  $p < 0.001$ ). More so, the goodness of fit  $deviance$  statistic was more robust than the previous models, since it has a smaller test statistic. Though, the  $AIC$  was larger due to penalties arising from the addition of more parameters in the model. The ensuing results from Model 4 indicated that the test variable outcomes were identical to that of Model 3. The coefficient of the intercept  $\beta_0$  (1.614) was positive and strongly significant ( $SE = 0.323$ ,  $p < 0.001$ ), the coefficient of the *Item2a*  $\beta_1$  (0.484) was positive and strongly significant ( $SE = 0.096$ ,  $p < 0.001$ ), while the coefficient of the *Item2b*  $\beta_2$  (-0.315) was negative and significant ( $SE = 0.068$ ,  $p < 0.001$ ). Equally, the coefficient of the *Item2d*  $\beta_4$  (0.190) was positive and strongly significant ( $SE = 0.066$ ,  $p < 0.01$ ), while the coefficient of the *Item2f*

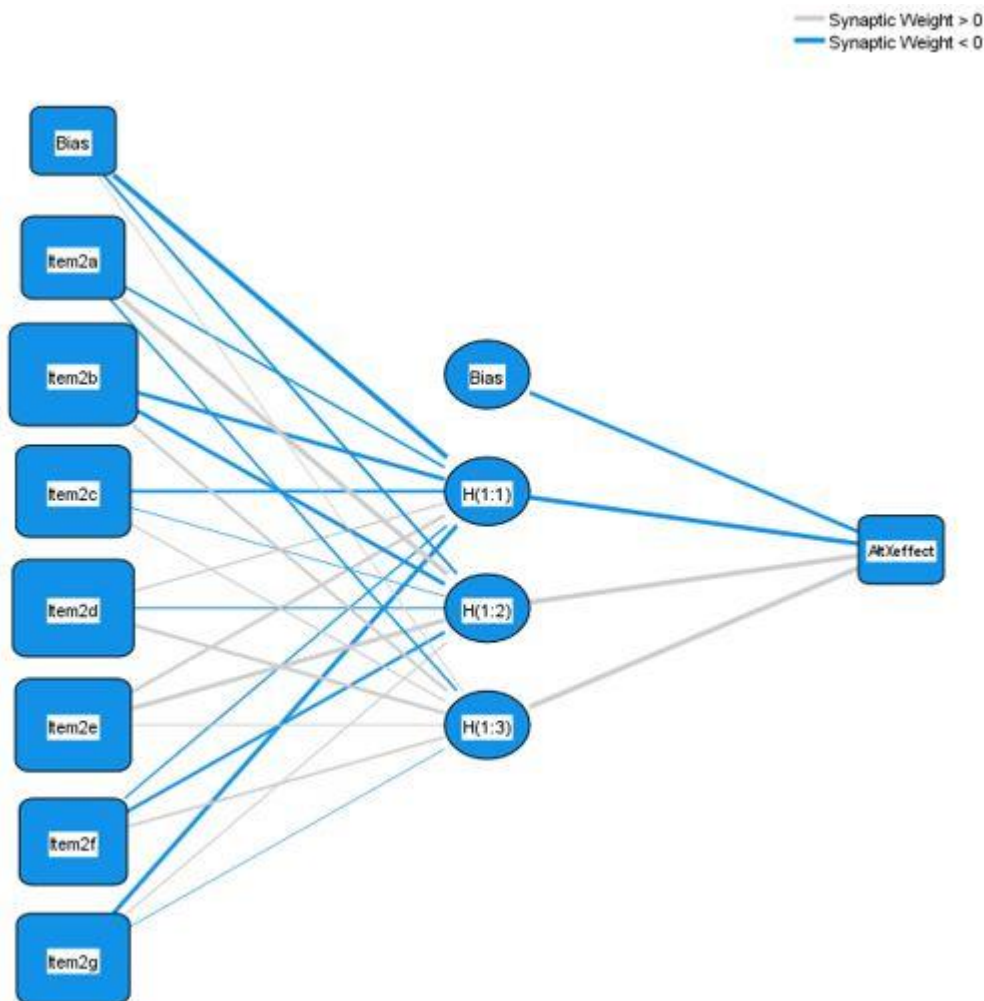
$\beta_6$  (0.191) was positive and significant ( $SE = 0.080$ ,  $p < 0.05$ ). Also, there was evidence of within-group variation in Model 4 due to its significant residual estimate of 0.188 ( $SE = 0.045$ ;  $p < 0.001$ ).

Lastly, in Model 5 of Table 6.4 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the interaction effects command. The estimates suggests that Hypothesis 1's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 90.81$ ,  $deviance = -181.62$ ,  $AIC = 136.81$ ,  $p < 0.001$ ). But the fit statistics was smaller when compared to the other models. Meanwhile, the resultant outcomes from Model 5 showed that the test variable results were comparable to that of Model 3 and 4. The coefficient of the intercept  $\beta_0$  (1.583) was positive and very significant ( $SE = 0.446$ ,  $p < 0.001$ ), the coefficient of the *Item2a*  $\beta_1$  (0.448) was positive and strongly significant ( $SE = 0.130$ ,  $p < 0.001$ ), while the coefficient of the *Item2b*  $\beta_2$  (-0.363) was negative and significant ( $SE = 0.079$ ,  $p < 0.001$ ). Equally, the coefficient of the *Item2d*  $\beta_4$  (0.234) was positive and strongly significant ( $SE = 0.074$ ,  $p < 0.01$ ). However, the observation that listing aided the development of a good record keeping culture in companies that complied with existing regulation in *Item2f* was not supported. In addition, the above model showed that there was evidence of within-group variation in Model 5 due to its significant residual estimate of 0.196 ( $SE = 0.000$ ;  $p < 0.001$ ). This statistic was however manually calculated due to redundancy issues associated with a small  $SE$ . Furthermore, the random effects covariance structures intercepts for the interaction effects were significant for *Item2axItem2b* and *Item2axItem2g*. Similarly, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit to the preceding model (Leckie, 2013). Similarly,  $VPC_v = 0$ ,  $VPC_u = 0$  and  $VPC_e = 1.0$ , this implies that there was no evidence of significant variation between locations, and within-locations-between-sectors, while it was observed that about 100% of the variation occurred within-sectors-between-the JSE's AltX variables. Expectedly, in Model 2, Model 3, Model 4 and Model 5, 86%, 91%, 88% and 61% of the dependent variable was jointly explained by the independent variables respectively.

### 6.4.3 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 1 SURVEY RESPONSE

Artificial Neural Networks (ANNs) was used to predict various Hypothesis 1 survey response iterations. According to Aryadoust and Baghaei (2016) ANNs are mathematical nonparametric models which is made up of interconnected set of processing units (i.e. neurons) which are adaptive (i.e. capable of pattern recognition) and trainable (i.e. ability to learn patterns) and contain experiential

knowledge (i.e. capable of prediction and classification). Additionally, the synaptic strengths or weights in ANNs are analogous to the models' beta coefficients, which indicate the impact of the exogenous explanatory variables on the endogenous measured variables, based on approximated functions. Correspondingly, the bias terms or thresholds of ANNs are analogous to the intercepts in the application models (Aryadoust and Goh, 2014).



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.1: Multilayer perceptron network diagram for Hypothesis 1 survey response (Source: Authors' compilation)**

In Figure 6.1 the multilayer perceptron network for Hypothesis 1 response variable has 3 layers, 1 bias term and 1 output (i.e. *AltXeffect*). More so, in the case processing summary, the sample had  $N = 36$  or 77% (with *relative error* 0.003) *Training* parameters and  $N = 11$  or 23% (with *relative error* 0.007) *Testing* parameters, which comprised on 47 valid responses and 1 excluded response. Also, the hidden layer 1 had a *Bias* output layer of -0.206 (i.e. *AltXeffect*), H(1:1) had an output layer of -0.485 (i.e. *AltXeffect*), H(1:2) had an output layer of 0.654 (i.e. *AltXeffect*) and H(1:3) had an output layer of 1.612

(i.e. *AltXeffect*). The rich insights provided by the perceptron ANNs ultimately showed that the independent variables had a normalised ranked importance of 100% for *Item2b*, 93% for *Item2d*, 86% for *Item2e*, 85% for *Item2c*, 83% for *Item2g*, 77% for *Item2f* and 72% for *Item2a*. This implies that listed firms must seriously consider the growth of the company's revenue base, as well as its level of profitability through the use of an enhanced media publicity to raise the corporate profile of their organisation both locally and internationally in order to meet their short-term, medium-term and long-term objectives of listing on the JSE's AltX, *ceteris paribus*.

#### 6.4.4 SURVEY RESPONSE HYPOTHESIS 2 FREQUENCIES STATISTICS

Given that one of the purposes of this study deals with the conceptualisation/crystallisation of entrepreneurship theory and processes, so that it can accurately capture and integrate the idea that the JSE's AltX capital market financing contributes significantly to broader industry disruption. The researcher thus intends to answer the research question "What is the relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa?" through the determination of the impact that the JSE's AltX has on the level of entrepreneurship in South Africa. This led to the formulation of Hypothesis 2: The unprecedented performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa. Part III of the survey questionnaire tried to ascertain this impact via the responses of participants in this section. In Table 6.5 the frequencies statistics for the survey response in hypothesis 2 was presented. For *Item3a* "An increase in the number of listings on the AltX have a net positive impact on the level of entrepreneurship in South Africa" 3 or 6% of the respondents either strongly agreed or disagreed, 21 or 44% of the respondents agreed, 14 or 29% of the respondents were undecided, while 7 or 15% of the respondents disagreed about the impact of the JSE's AltX in this critical area. The *mean* (3.29), *standard error of mean* (0.146) and *standard deviation* (1.01) of *Item3a* indicated that the average response leaned away from the neutral towards a positive perspective with a low level of variation. Next, for *Item3b* "SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa" 6 or 13% of the respondents strongly agreed, 15 or 31% of the respondents either agreed or were undecided, 9 or 19% of the respondents disagreed, while 3 or 6% of the respondents strongly disagreed about the impact of the JSE's AltX in this contentious part. The *mean* (3.25), *standard error of mean* (0.159) and *standard deviation* (1.101) of *Item3b* specified that the average response leaned away from the neutral point towards a positive position with minor disparity.

**Table 6.5 Survey response hypothesis 2 frequencies statistics**

	N		Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing												
Item3a	48	0	3.29	0.146	3.5	4	1.01	1.02	-0.628	0.343	-0.104	0.674	1	5
Item3b	48	0	3.25	0.159	3	3 <sup>a</sup>	1.101	1.213	-0.224	0.343	-0.573	0.674	1	5
Item3c	48	0	3.25	0.153	3.5	4	1.062	1.128	-0.306	0.343	-0.836	0.674	1	5
Item3d	48	0	3.29	0.143	3	3	0.988	0.977	-0.491	0.343	0.222	0.674	1	5
Item3e	48	0	3.35	0.141	4	4	0.978	0.957	-0.638	0.343	-0.178	0.674	1	5
Item3f	48	0	3.38	0.142	4	4	0.981	0.963	-0.833	0.343	0.398	0.674	1	5
Item3g	48	0	3.42	0.136	4	4	0.942	0.887	-1.105	0.343	0.933	0.674	1	5
EntreLevel	48	0	3.3185	0.11151	3.2857	3.29	0.77254	0.597	-0.851	0.343	1.072	0.674	1	4.71

*N* = 48, *Item3a* An increase in the number of listings on the AltX have a net positive impact on the level of entrepreneurship in South Africa, *Item3b* SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa, *Item3c* It enhances the efficiency and effectiveness of our company, hence improves firm competitiveness, *Item3d* The AltX serves as an incubator for young high growth companies, and assists in the training of SME managers, *Item3e* Registering on the junior exchange encourages entrepreneurial risk taking, and increases business confidence, *Item3f* Firm listing motivates entrepreneurs by creating a high energy environment, where ideation thrives iteratively, *Item3g* The combination of miscellaneous factors causes firm listing to impact on the level of entrepreneurship in South Africa, *EntreLevel* Impact of firm listing on the level of entrepreneurship in South Africa. A. Multiple modes exist (the smallest value is shown).



Furthermore, for *Item3c* “It enhances the efficiency and effectiveness of our company, hence improves firm competitiveness” 4 or 8% of the respondents strongly agreed, 20 or 42% of the respondents agreed, 10 or 21% of the respondents were undecided, 12 or 25% of the respondents disagreed, while 2 or 4% of the respondents strongly disagreed about the impact of the JSE’s AltX in this crucial area. The *mean* (3.25), *standard error of mean* (0.153) and *standard deviation* (1.062) of *Item3c* indicated that the average response leaned away from the neutral towards a positive perspective with a low level of variation. Subsequently, for *Item3d* “The AltX serves as an incubator for young high growth companies, and assists in the training of SME managers” 4 or 8% of the respondents strongly agreed, 17 or 35% of the respondents agreed, 19 or 40% of the respondents were undecided, 5 or 10% of the respondents disagreed, while 3 or 6% of the respondents strongly disagreed about the impact of the JSE’s AltX in this vital section. The *mean* (3.29), *standard error of mean* (0.143) and *standard deviation* (0.988) of *Item3d* indicated that the average response leaned from the neutral level towards an optimistic viewpoint with a low variance. Next, for *Item3e* “Registering on the junior exchange encourages entrepreneurial risk taking, and increases business confidence” 3 or 6% of the respondents strongly agreed, 23 or 48% of the respondents agreed, 12 or 25% of the respondents were undecided, 8 or 17% of the respondents disagreed, while 2 or 4% of the respondents strongly disagreed about the impact of the JSE’s AltX in this important area. The *mean* (3.35), *standard error of mean* (0.141) and *standard deviation* (0.978) of *Item3e* indicated that the average response leaned from the neutral towards the positive angle with a low level of variation.

Afterwards, for *Item3f* “Firm listing motivates entrepreneurs by creating a high energy environment, where ideation thrives iteratively” 3 or 6% of the respondents strongly agreed, 23 or 48% of the respondents agreed, 14 or 29% of the respondents were undecided, 5 or 10% of the respondents disagreed, while 3 or 6% of the respondents strongly disagreed about the impact of the JSE’s AltX in this critical section. The *mean* (3.38), *standard error of mean* (0.142) and *standard deviation* (0.981) of *Item3f* indicated that the average response was positive with a low level of variance. Then, for *Item3g* “The combination of miscellaneous factors causes firm listing to impact on the level of entrepreneurship in South Africa” 2 or 4% of the respondents strongly agreed, 26 or 54% of the respondents agreed, 13 or 27% of the respondents were undecided, 4 or 8% of the respondents disagreed, while 3 or 6% of the respondents strongly disagreed about the impact of the JSE’s AltX in this critical area. The *mean* (3.42), *standard error of mean* (0.136) and *standard deviation* (0.942) of *Item3g* indicated that the average response leaned slightly from the neutral point towards a positive perspective with a low level of variability.

Building on the previous section, the third part of the survey questionnaire was used to ascertain inferences about the impact of firm listing on the level of entrepreneurship in South Africa through the measurement of related variables. The researcher envisioned that listing on the JSE's AltX would lead to the overall development of registered firms – an advantage which was projected to cause multiplier effects in the entrepreneurial ecosystem in South Africa. Consequently, the dependent variable *EntreLevel* was designed to capture the impact of firm listing on the JSE's AltX on the entrepreneurship level in South Africa. This construct had a positive *mean* of 3.32, *standard error of mean* of 0.112 and *standard deviation* of 0.773. The MLM econometrics analysis implemented in the next section is expected to identify the within and between relationships/variation amongst these parameters. Principally, this would assist the researcher in providing deep insights about the impact of firm listing on the level of entrepreneurship in South Africa, *ceteris paribus*.

#### 6.4.5 HYPOTHESIS 2 SURVEY RESPONSE MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.6 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 2 with *EntreLevel* i.e. impact of firm listing on the level of entrepreneurship in South Africa as the dependent variable. Model 1 of Table 6.6 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of firm listing on the level of entrepreneurship in South Africa. Since no predictors were included in the model at Level 1, the intercept is equal to the *EntreLevel* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of firm listing on the level of entrepreneurship in South Africa by 3.319. This can be further illustrated using the test ( $t$ ) statistic, which is presented as  $t$  (degrees of freedom) =  $t$  statistic,  $p$  =  $p$  value.

This implies that the respondents agreed that ( $M = 3.319$ ,  $SE = 0.110$ ) the impact of firm listing on the level of entrepreneurship in South Africa is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(48) = 30.075$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 contains estimated within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positively significant at all levels, however, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Levels 2 and 3. Consistent with similar studies, the null model's

mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -55.22 with a *deviance* statistic of 110.43, while its *AIC* was 114.43, which makes a lot of sense in the ensuing model analysis.

**Table 6.6 Hypothesis 2 MLM equation for the survey response**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
$\beta_0$	3.319*** (0.110)	1.321*** (0.327)	1.321*** (0.327)	0.838** (0.271)	0.969*** (0.220)
Item3a		0.163 (0.108)	0.163 (0.108)	0.087 (0.114)	0.205 (0.116)
Item3b		0.179* (0.077)	0.179* (0.077)	0.038 (0.079)	0.395** (0.132)
Item3c		0.023 (0.086)	0.023 (0.086)	0.127 (0.096)	-0.040 (0.079)
Item3d		-0.103 (0.088)	-0.103 (0.088)	-0.030 (0.083)	-0.129* (0.055)
Item3e		0.192* (0.078)	0.192* (0.078)	0.232*** (0.065)	0.173*** (0.048)
Item3f		0.223** (0.072)	0.223** (0.072)	0.292** (0.111)	0.211** (0.072)
Item3g		-0.002 (0.092)	-0.002 (0.092)	0.054 (0.114)	-0.068 (0.121)
$\sigma_e^2$	0.584*** (0.119)	0.274*** (0.056)	0.274*** (0.056)	0.129* (0.065)	0.038 (0.027)
$\sigma_v^2$	<i>1.48e-17</i> (3.75e-16)		<i>7.34e-24</i> (1.29e-19)	0.000 (0.000)	0.000 (0.000)
$\sigma_u^2$	<i>9.69e-20</i> (1.07e-18)	<i>7.81e-25</i> (1.12e-23)	<i>3.81e-24</i> (4.09e-23)	0.023 (0.393)	<i>0.000</i> (0.000)
$\sigma_v^2 \times \sigma_u^2$				0.000 (0.000)	0.014 (0.000)
Log-likelihood	-55.22	-37.05	-37.05	-40.68	-49.98
Deviance	110.43	74.10	74.10	81.36	99.95
AIC	114.43	94.10	94.10	117.36	145.95
Fixed effects	No	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes

$N = 48$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX variables,  $\sigma_u^2$  the level two variance i.e. sector,  $\sigma_v^2$  the level three variance i.e. location, *AIC* Akaike's Information Criterion. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues.  
\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Next, Model 2 of Table 6.6 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = -37.05, *deviance* = 74.10, *AIC* = 94.10, *Wald chi2(7)* = 54.32,  $p < 0.001$ ). Hence, the results from Hypothesis 2 tests indicated that the unprecedented performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa. This is consistent with findings from similar studies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015; JSE, 2020). More so, this also showed that Model 2 was more robust

than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of 74.10 against 216.947 and 110.43 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 1.321 ( $SE = 0.327$ ,  $p < 0.001$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 1.321 on the level of entrepreneurship in South Africa, due to the impact of firm listing on the JSE's AltX. That said, as expected SME registration on the lower bourse helped to boost the level of creativity, innovation and R&D in South Africa, since the coefficient  $\beta_2$  (0.179) of *Item3b* was positive and significant ( $SE = 0.077$ ,  $p < 0.05$ ). Also, listing on the AltX (*Item3e*) had a positive and significant effect on entrepreneurial risk taking and business confidence ( $\beta_5 = 0.192$ ,  $SE = 0.078$ ,  $p < 0.05$ ). Perhaps, this is due to the fact that being a JSE's AltX listed company improves business, investor and consumer confidence, as well as SME risk appetite, thus motivating these firms to expand their operations both locally and internationally (Killick, 2008; Giyani Gold, 2016; JSE, 2020).

Furthermore, predictably, firm listing inspired entrepreneurs via the creation of a high energy environment, where ideation flourished continuously. Consequently, any 1-unit increase in the coefficient of *Item3f* ( $\beta_6$ ) would lead to a 0.223 times positive effect on entrepreneurs by creating a high energy environment, where ideation thrives iteratively ( $SE = 0.072$ ,  $p < 0.01$ ). Also, there was evidence of within-group variation in Model 2 with residual estimate of 0.274 ( $SE = 0.056$ ;  $p < 0.001$ ). Subsequently, in Model 3 of Table 6.6 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were identical to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 2 was fully supported ( $\log likelihood = -37.05$ ,  $deviance = 74.10$ ,  $AIC = 94.10$ ,  $Wald\ chi^2(7) = 54.32$ ,  $p < 0.001$ ). While, the coefficient of the intercept  $\beta_0$ , as well as the coefficients of *Item3a*  $\beta_1$ , *Item3b*  $\beta_2$ , *Item3c*  $\beta_3$ , *Item3d*  $\beta_4$ , *Item3e*  $\beta_5$ , *Item3f*  $\beta_6$ , *Item3g*  $\beta_7$  were exactly the same as their values and significance levels in Model 2. This is consistent with the findings of prior studies (Moolman, 2004; Mashaba, 2014; Heerden, 2015, JSE, 2020). Likewise, there was evidence of within-group variation in Model 3 with its residual estimate of 0.274 ( $SE = 0.056$ ;  $p < 0.001$ ) being very positive and significant.

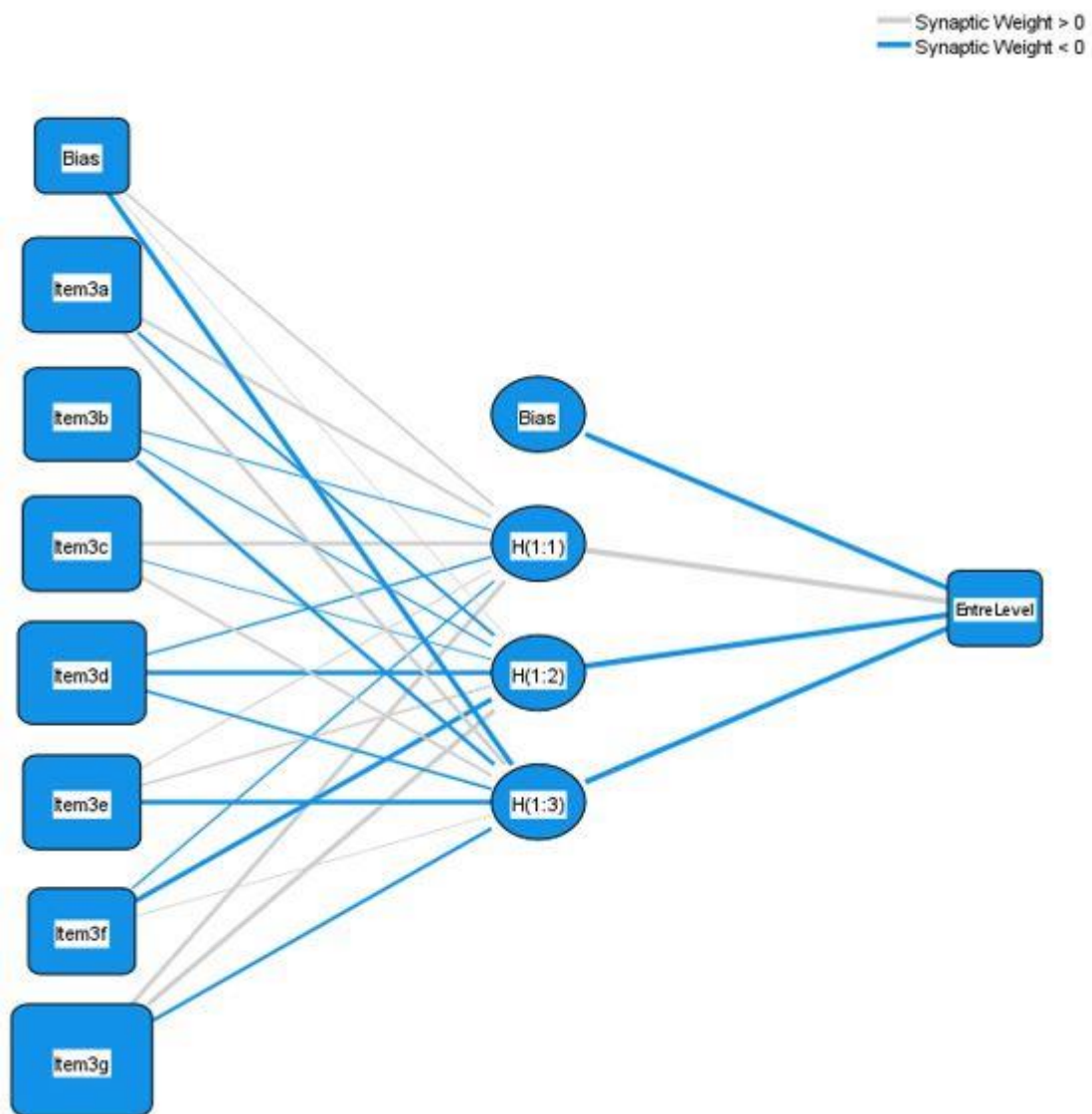
Interestingly, Model 3's report was only more robust than that of Model 1 given its low  $\log likelihood$  and *deviance* statistic, which was identical to Model 2. This suggests that (for the JSE's AltX listed firms) the influence of location has a minimal effect on the level of entrepreneurship in South Africa. Afterwards, in Model 4 of Table 6.6 a 3-level model with fixed level 1, 2 and 3 predictors, and

randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 2's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = -40.68$ ,  $deviance = 81.36$ ,  $AIC = 117.36$ ,  $p < 0.001$ ). However, the goodness of fit  $deviance$  statistic was less robust than the previous models, because it has a larger test statistic – just like, the  $AIC$ . The ensuing results from Model 4 indicated that the test variable outcomes were similar to that of Model 3. The coefficient of the intercept  $\beta_0$  (0.838) was positive and strongly significant ( $SE = 0.271$ ,  $p < 0.01$ ), the coefficient of the *Item3e*  $\beta_5$  (0.232) was positive and strongly significant ( $SE = 0.065$ ,  $p < 0.001$ ). Also, the coefficient of the *Item3f*  $\beta_6$  (0.292) was positive and significant ( $SE = 0.111$ ,  $p < 0.01$ ). However, the coefficient of the *Item3b*  $\beta_2$  (0.038) was positive but not significant ( $SE = 0.079$ ,  $p = 0.635$ ), unlike it was in Model 3. More so, there was evidence of within-group variation in Model 4 due to its significant residual estimate of 0.129 ( $SE = 0.065$ ;  $p < 0.05$ ).

Lastly, in Model 5 of Table 6.6 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the interaction effects command. The estimates suggests that Hypothesis 2's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = -49.98$ ,  $deviance = 99.95$ ,  $AIC = 145.95$ ,  $p < 0.001$ ). But the fit statistics was larger when compared to the other models. Meanwhile, the resultant outcomes from Model 5 showed that the test variable results were comparable to that of Model 2, 3 and 4. The coefficient of the intercept  $\beta_0$  (0.969) was positive and very significant ( $SE = 0.220$ ,  $p < 0.001$ ), the coefficient of the *Item3b*  $\beta_2$  (0.395) was positive and strongly significant ( $SE = 0.132$ ,  $p < 0.01$ ), while the coefficient of the *Item3d*  $\beta_4$  (-0.129) was negative and significant ( $SE = 0.055$ ,  $p < 0.05$ ). This implies that the JSE's AltX does not really serve as an incubator for young high growth companies, and/or assists in the training of SME managers. Equally, the coefficient of the *Item3e*  $\beta_5$  (0.173) was positive and strongly significant ( $SE = 0.048$ ,  $p < 0.001$ ). Similarly, the coefficient of the *Item3f*  $\beta_6$  (0.211) was positive and strongly significant ( $SE = 0.072$ ,  $p < 0.01$ ). In addition, unlike Model 1, 2, 3 and 4 showed there was no evidence of within-group variation in Model 5 due to its non-significant residual estimate of 0.038 ( $SE = 0.027$ ;  $p = 0.161$ ). Furthermore, the random effects covariance structures intercepts for the interaction effects were significant for *Item3ax/Item3b* and *Item3ax/Item3g*. Similarly, the LR test statistic shows that the succeeding models were a better fit to the preceding model for Models 1-3, however, Models 4 and 5 had more badness of fit statistic (Leckie, 2013). Similarly,  $VPC_v = 0$ ,  $VPC_u = 0$  and  $VPC_e = 1.0$ , this implies that there was no evidence of significant variation between locations, and within-locations-between-sectors, while it was observed that about 100% of the variation occurred within-sectors-between-the JSE's AltX variables for Model 1, 2, 3 and

5. However, in Model 4,  $VPC_v = 0$ ,  $VPC_u = 0.15$  and  $VPC_e = 0.85$ , implies that there was no evidence of significant variation between locations, but there exists a 15% within-locations-between-sectors variation, and about 85% variation within-sectors-between-the JSE's AltX variables. Expectedly, in Model 2, Model 3, Model 4 and Model 5, 41%, 41%, 32% and 59% of the dependent variable was jointly explained by the independent variables respectively.

### 6.4.6 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 2 SURVEY RESPONSE



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.2: Multilayer perceptron network diagram for Hypothesis 2 survey response (Source: Authors' compilation)**

ANNs was used to predict various Hypothesis 2 survey response iterations. In Figure 6.2 the multilayer perceptron network for Hypothesis 2 response variable

has 3 layers, 1 bias term and 1 output (i.e. *EntreLevel*). More so, in the case processing summary, the sample had  $N = 32$  or 67% (with *relative error* 0.003) *Training* parameters and  $N = 16$  or 33% (with *relative error* 0.007) *Testing* parameters, which on aggregate results in 48 valid responses. Also, the hidden layer 1 had a *Bias* output layer of -0.537 (i.e. *EntreLevel*), H(1:1) had an output layer of 1.350 (i.e. *EntreLevel*), H(1:2) had an output layer of -1.025 (i.e. *EntreLevel*) and H(1:3) had an output layer of -0.990 (i.e. *EntreLevel*). The rich insights provided by the perceptron ANNs ultimately revealed that the independent variables had a normalised ranked importance of 100% for *Item3g*, 86% for *Item3d*, 76% for *Item3c*, 76% for *Item3a*, 75% for *Item3e*, 73% for *Item3b* and 64% for *Item3f*. This implies that listed firms should seriously consider the fact that a combination of miscellaneous factors causes firm listing to impact on the level of entrepreneurship in South Africa. Consequently, the JSE's AltX listed firms are expected to itemise these parameters based on their level of importance and work towards achieving these goals, in order to meet their short-term, medium-term and long-term objectives, *ceteris paribus*. Lastly, since the JSE's AltX is expected to serve as an incubator for young high growth companies, and also assist in the training of SME managers into becoming multinational industry players, efforts should be made to partner/engage these firms with government agencies and private sector players so as to attain peak performance targets.

#### 6.4.7 SURVEY RESPONSE HYPOTHESIS 3 FREQUENCIES STATISTICS

Given that one of the purposes of this study is the quantitative identification and description of the JSE's AltX listed firms using theory-based empirical research. The researcher intends to answer the research question "How does increased share capital levels influence the expansion and performance of listed firms on the AltX?" through the determination of the impact that the JSE's AltX has on listed firm's performance. It is therefore necessary to quantitatively establish whether there is a link between increased capitalisation of the JSE's AltX and the expansionary drive of listed firms. This led to the formulation of Hypothesis 3: The rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion. Part IV of the survey questionnaire tried to ascertain this impact via the responses of participants in this section. In Table 6.7 the frequencies statistics for the survey response in hypothesis 3 was presented. For *Item4a* "We used the initial public offering (IPO) of our company's share as a principal source of capital financing for the firm" 2 or 4% of the respondents strongly agreed, 15 or 31% of the respondents agreed, 12 or 25% of the respondents were either undecided or disagreed, while 6 or 13% of the respondents strongly disagreed about the impact of the JSE's AltX in this critical area (with 1 or 2% missing data). The *mean* (2.89), *standard error of mean* (0.164) and *standard deviation* (1.127) of *Item4a* indicated that the

**Table 6.7 Survey response hypothesis 3 frequencies statistics**

	N		Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing												
Item4a	47	1	2.89	0.164	3	4	1.127	1.271	-0.163	0.347	-0.958	0.681	1	5
Item4b	47	1	3.23	0.164	4	4	1.127	1.27	-0.486	0.347	-0.652	0.681	1	5
Item4c	47	1	3.06	0.141	3	3	0.965	0.931	-0.284	0.347	-0.208	0.681	1	5
Item4d	47	1	3.15	0.175	3	4	1.197	1.434	-0.379	0.347	-0.709	0.681	1	5
Item4e	47	1	3.15	0.177	3	4	1.215	1.477	-0.373	0.347	-0.828	0.681	1	5
Item4f	47	1	3.19	0.182	3	4	1.245	1.549	-0.38	0.347	-0.875	0.681	1	5
Item4g	47	1	3.17	0.170	4	4	1.167	1.362	-0.603	0.347	-0.67	0.681	1	5
ScapLE	47	1	3.122	0.140	3.143	4	0.959	0.919	-0.467	0.347	-0.397	0.681	1	5

*N* = 48, *Item4a* We used the initial public offering (IPO) of our company's share as a principal source of capital financing for the firm, *Item4b* Listing on the AltX enabled our company to pool funds for expansionary purposes via acquisitions and joint ventures, *Item4c* Corporate bonds and equities sold by our company on the AltX guaranteed the long term sustainability of our business, *Item4d* The capital sourced from the AltX is being used to achieve our short-term goals such as product and market expansion, *Item4e* Listing funds was used to diversify our market segments across various niches and increase our manufacturing volume, *Item4f* Registering on the AltX enabled us to gain international exposure and has helped to consolidate our industry position, *Item4g* A combination of miscellaneous factors triggered our share capital growth and led to improved performance/expansion, *ScapLE* Increased share capital levels influence on the expansion and performance of listed firms.



Average response leaned slightly towards the neutral from a negative angle with a low level of variation. Next, for *Item4b* "Listing on the AltX enabled our company to pool funds for expansionary purposes via acquisitions and joint ventures" 4 or 8% of the respondents strongly agreed, 20 or 42% of the respondents agreed, 10 or 21% of the respondents were undecided, 9 or 19% of the respondents disagreed, while 4 or 8% of the respondents strongly disagreed about the impact of the JSE's AltX in this contentious part (with 1 or 2% missing data). The *mean* (3.23), *standard error of mean* (0.164) and *standard deviation* (1.127) of *Item4b* specified that the average response leaned away from the neutral towards a positive position with a slight disparity.

Furthermore, for *Item4c* "Corporate bonds and equities sold by our company on the AltX guaranteed the long term sustainability of our business" 2 or 4% of the respondents strongly agreed, 14 or 29% of the respondents agreed, 19 or 40% of the respondents were undecided, 9 or 19% of the respondents disagreed, while 3 or 6% of the respondents strongly disagreed about the impact of the JSE's AltX in this crucial area (with 1 or 2% missing data). The *mean* (3.06), *standard error of mean* (0.141) and *standard deviation* (0.965) of *Item4c* indicated that the average response leaned away from the neutral towards a positive perspective with a low level of variation. Subsequently, for *Item4d* "The capital sourced from the AltX is being used to achieve our short-term goals such as product and market expansion" 5 or 10% of the respondents strongly agreed, 16 or 33% of the respondents agreed, 13 or 27% of the respondents were undecided, 7 or 15% of the respondents disagreed, while 6 or 13% of the respondents strongly disagreed about the impact of the JSE's AltX in this vital section (with 1 or 2% missing data). The *mean* (3.15), *standard error of mean* (0.175) and *standard deviation* (1.197) of *Item4d* indicated that the average response leaned from the neutral level towards an optimistic viewpoint with a low variance. Next, for *Item4e* "Listing funds was used to diversify our market segments across various niches and increase our manufacturing volume" 5 or 10% of the respondents strongly agreed, 17 or 35% of the respondents agreed, 11 or 23% of the respondents were undecided, 8 or 17% of the respondents disagreed, while 6 or 13% of the respondents strongly disagreed about the impact of the JSE's AltX in this important area (with 1 or 2% missing data). The *mean* (3.15), *standard error of mean* (0.177) and *standard deviation* (1.215) of *Item4e* indicated that the average response leaned away from the neutral towards a positive perspective with a low level of variation.

Afterwards, for *Item4f* "Registering on the AltX enabled us to gain international exposure and has helped to consolidate our industry position" 6 or 13% of the respondents strongly agreed, 17 or 35% of the respondents agreed, 10 or 21% of the respondents were undecided, 8 or 17% of the respondents disagreed,

while 6 or 13% of the respondents strongly disagreed about the impact of the JSE's AltX in this critical section (with 1 or 2% missing data). The *mean* (3.19), *standard error of mean* (0.182) and *standard deviation* (1.245) of *Item4f* indicated that the average response was positive with a low level of variance. Then, for *Item4g* "A combination of miscellaneous factors triggered our share capital growth and led to improved performance/expansion" 3 or 6% of the respondents strongly agreed, 21 or 44% of the respondents agreed, 10 or 21% of the respondents were undecided, 7 or 15% of the respondents disagreed, while 6 or 13% of the respondents strongly disagreed about the impact of the JSE's AltX in this critical area. There was however 1 missing response in this section representing about 2% of the total participant's responses. The *mean* (3.17), *standard error of mean* (0.170) and *standard deviation* (1.167) of *Item4g* indicated that the average response leaned slightly from the neutral point towards a positive perspective with a low level of variability.

Objectively, the researcher was chiefly preoccupied with task of quantitatively establishing whether there exists a link between increased capitalisation of the JSE's AltX and the expansionary drive of listed firms. It was anticipated that this advantage would be of varying significance based on the industrial sector where these firms operate in. Consequently, the dependent variable *ScapLE* was designed to capture the impact of increased share capital levels on the expansionary drive and performance of listed firms. This construct had a positive *mean* of 3.12, *standard error of mean* of 0.140 and *standard deviation* of 0.959. The MLM econometrics analysis implemented in the next section is expected to identify the within and between relationships/variation amongst these parameters. Principally, this would assist the researcher in providing fresh insights about the desired level/effect of capitalisation on the JSE's AltX for listed high growth firms.

#### 6.4.8 HYPOTHESIS 3 SURVEY RESPONSE MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.8 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 3 with *SCapLE* i.e. the impact of increased share capital levels on the expansionary drive and performance of listed firms as the dependent variable. Model 1 of Table 6.8 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of increased share capital levels on the expansionary drive and performance of listed firms. Since no predictors were included in the model at Level 1, the intercept is equal to the *SCapLE* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and

significant increase/impact of share capital levels on the expansionary drive and performance of listed firms by 3.122. This can be further illustrated using the test ( $t$ ) statistic, which is presented as  $t$  (degrees of freedom) =  $t$  statistic,  $p$  =  $p$  value.

**Table 6.8 Hypothesis 3 MLM equation for the survey response**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
$\beta_0$	3.122*** (0.138)	2.573*** (0.367)	2.573*** (0.367)	2.586*** (0.341)	3.119*** (0.392)
Item4a		0.079 (0.125)	0.079 (0.125)	0.079 (0.118)	-0.197 (0.150)
Item4b		0.284 (0.153)	0.284 (0.153)	0.321* (0.148)	0.871*** (0.180)
Item4c		-0.320* (0.142)	-0.320* (0.142)	-0.328* (0.134)	-0.104 (0.103)
Item4d		-0.088 (0.150)	-0.088 (0.150)	-0.107 (0.151)	-0.234* (0.116)
Item4e		-0.078 (0.119)	-0.078 (0.119)	-0.081 (0.122)	0.094 (0.094)
Item4f		0.387** (0.147)	0.387** (0.147)	0.415** (0.147)	0.207 (0.125)
Item4g		-0.024 (0.123)	-0.024 (0.123)	-0.074 (0.120)	-1.090*** (0.158)
$\sigma_e^2$	0.900*** (0.186)	0.554*** (0.114)	0.554*** (0.114)	0.455* (0.217)	0.139*** (0.000)
$\sigma_v^2$	3.11e-17 (0.000)		1.27e-25 (2.73e-24)	0.000 (0.000)	0.000 (0.000)
$\sigma_u^2$	2.80e-19 (3.13e-18)	5.11e-17 (9.16e-16)	3.33e-24 (3.84e-23)	0.000 (0.000)	0.009 (0.234)
$\sigma_v^2 \times \sigma_u^2$				0.000 (0.000)	0.209 (0.000)
Log-likelihood	-64.21	-52.82	-52.82	-56.65	-65.88
Deviance	128.41	105.64	105.64	113.31	131.76
AIC	134.41	125.64	125.64	149.31	177.76
Fixed effects	No	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes

$N = 48$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX variables,  $\sigma_u^2$  the level two variance i.e. sector,  $\sigma_v^2$  the level three variance i.e. location,  $AIC$  Akaike's Information Criterion. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues.  
\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

This implies that the respondents agreed that ( $M = 3.122$ ,  $SE = 0.138$ ) the impact of increased share capital levels on the expansionary drive and performance of listed firms is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(47) = 22.562$ ,  $p = 0.000$ . Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 contains estimated within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positively significant at all levels, however, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Levels 2 and 3. Consistent with similar studies, the null model's mean estimate is the only parameter

indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -64.21 with a *deviance* statistic of 128.41, while its *AIC* was 134.41, which makes a lot of sense in the following model analysis.

Next, Model 2 of Table 6.8 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = -52.82, *deviance* = 105.64, *AIC* = 125.64, *Wald chi2(7)* = 29.29,  $p < 0.001$ ). Hence, the results from Hypothesis 3 tests indicated that increased share capital levels have a positive and significant influence on the expansion and performance of listed firms. This is consistent with findings from similar studies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of 105.64 against 237.243 and 128.41 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 2.573 (*SE* 0.367,  $p < 0.001$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 2.573 in share capital levels influence on the expansion and performance of listed firms. That said, surprisingly, corporate bonds and equities sold by listed companies on the AltX did not guarantee the long-term sustainability of registered firms, given that the coefficient  $\beta_1$  (-0.320) of *Item4a* was negative and significant (*SE* = 0.142,  $p < 0.05$ ). This can be traced to issues pertaining to the cost of funds being raised in the TOT and POT, which was discussed in the literature review section of this study, as well as the countervailing problems of ownership, sell-offs and liquidity that it causes (Adair and Adaskou, 2015; Bukalska, 2019; Agyei, Sun, and Abrokwah, 2020).

Furthermore, predictably, registering on the JSE's AltX enabled listed companies to gain international exposure, and also assisted these firms to consolidate their industry position. Consequently, any 1-unit increase in the coefficient of *Item4f* ( $\beta_6$ ) would lead to a 0.387 times positive impact on firm performance for SMEs that are listed on the JSE's AltX (*SE* = 0.147,  $p < 0.01$ ). Also, there was evidence of within-group variation in Model 2 with residual estimate of 0.554 (*SE* = 0.114;  $p < 0.001$ ). Subsequently, in Model 3 of Table 6.8 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were identical to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 3 was fully supported (*log likelihood* = -52.82, *deviance* = 105.64, *AIC* = 125.64, *Wald chi2(7)* = 29.29,  $p < 0.001$ ). While, the coefficient of the intercept  $\beta_0$ , as well as the coefficients

of *Item4a*  $\beta_1$ , *Item4b*  $\beta_2$ , *Item4c*  $\beta_3$ , *Item4d*  $\beta_4$ , *Item4e*  $\beta_5$ , *Item4f*  $\beta_6$ , *Item4g*  $\beta_7$  were exactly the same as their values and significance levels in Model 2. This is consistent with the findings of prior studies (Moolman, 2004; Mashaba, 2014; Heerden, 2015, JSE, 2020). Likewise, there was evidence of within-group variation in Model 3 with its residual estimate of 0.554 ( $SE = 0.114$ ;  $p < 0.001$ ) being very positive and significant.

Interestingly, Model 3's report was only more robust than that of Model 1 given its low *log likelihood* and *deviance* statistic, which was identical to Model 2. This suggests that (for the JSE's AltX listed firms) the influence of location has a minimal effect on share capital levels impact on the expansion and performance of listed firms. Afterwards, in Model 4 of Table 6.8 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 3's positive and significant relationship with the response variable was further reinforced (*log likelihood* = -56.65, *deviance* = 113.31, *AIC* = 149.31,  $p < 0.001$ ). More so, the goodness of fit *deviance* statistic was less robust than the previous models, since it has a slightly larger test statistic. Similarly, the *AIC* was also larger due to penalties arising from the addition of more parameters in the model. The ensuing results from Model 4 indicated that the test variable outcomes were similar to that of Model 3. The coefficient of the intercept  $\beta_0$  (2.586) was positive and strongly significant ( $SE = 0.341$ ,  $p < 0.001$ ), the coefficient of the *Item4b*  $\beta_2$  (0.484) became positive and significant ( $SE = 0.148$ ,  $p < 0.05$ ). This implies that when nested terms are added to the equation, listing on the AltX enabled numerous companies to pool funds for expansionary purposes via acquisitions and joint ventures. While the coefficient of the *Item4c*  $\beta_3$  (-0.328) was negative and significant ( $SE = 0.134$ ,  $p < 0.05$ ), as in Model 2 and 3. Equally, the coefficient of the *Item4f*  $\beta_6$  (0.415) was positive and strongly significant ( $SE = 0.147$ ,  $p < 0.01$ ). Also, there was evidence of within-group variation in Model 4 due to its significant residual estimate of 0.455 ( $SE = 0.217$ ;  $p < 0.05$ ).

Lastly, in Model 5 of Table 6.8 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the interaction effects command. The estimates suggests that Hypothesis 3's positive and strongly significant relationship with the outcome variable was further strengthened (*log likelihood* = -65.88, *deviance* = 131.76, *AIC* = 177.76,  $p < 0.001$ ). But the fit statistics was smaller when compared to the other models. Meanwhile, the resultant outcomes from Model 5 showed that the test variable results were comparable to that of Model 2, 3 and 4. The coefficient of the intercept  $\beta_0$  (3.119) was positive and very significant ( $SE = 0.392$ ,  $p < 0.001$ ), the coefficient of the *Item4b*  $\beta_2$  (0.871) was positive and strongly significant ( $SE = 0.180$ ,  $p < 0.001$ ), while the coefficient of the *Item4d*  $\beta_4$  (-0.234) was negative

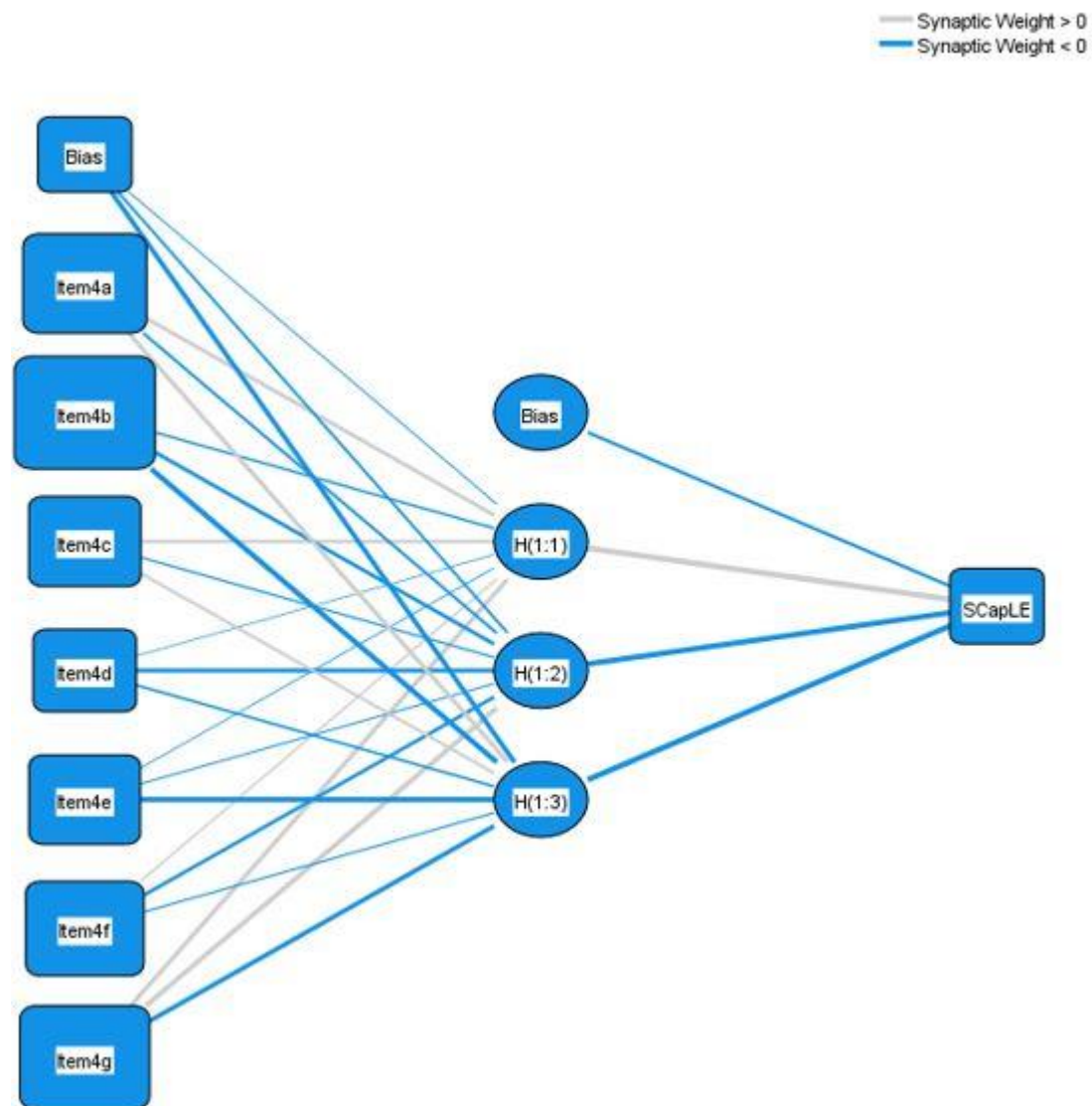
and significant ( $SE = 0.116$ ,  $p < 0.05$ ). This implies that the capital sourced from the AltX which is being used to achieve short-term goals such as product and market expansion by listed firms is negatively associated with increased share capital levels influence on the expansion and performance of listed companies. The TOT and POT can be used to describe this phenomenon (Adair and Adaskou, 2015; Bukalska, 2019; Agyei, Sun, and Abrokwah, 2020). Equally, the coefficient of the *Item4g*  $\beta_7$  (-1.090) was negative and significant ( $SE = 0.158$ ,  $p < 0.001$ ). Also, it can be deduced that there is a negative and significant relationship that exists between a combination of miscellaneous factors triggered by the share capital growth that led to improved performance/expansion of these quoted firms. According to Mlonzi et al. (2010) there is substantial negative share price reaction to earnings announcements on the AltX stock market, which also exhibited the weak-form of market efficiency. While, Harvey (2016) adds that there is a significant negative relationship which exists between failure and Buy-and-Hold Abnormal Return (BHAR).

In addition, the above model showed that there was evidence of within-group variation in Model 5 due to its significant residual estimate of 0.139 ( $SE = 0.000$ ;  $p < 0.001$ ). This statistic was however manually calculated due to redundancy issues associated with a small  $SE$ . Furthermore, the random effects covariance structures intercepts for the interaction effects were significant for *Item4axItem4b*, while, *Item4axItem4g* was not significant. Similarly, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit to the preceding model, excluding Model 4 and 5 (Leckie, 2013). Similarly,  $VPC_v = 0$ ,  $VPC_u = 0$  and  $VPC_e = 1.0$ , this implies that there was no evidence of significant variation between locations, and within-locations-between-sectors, while it was observed that about 100% of the variation occurred within-sectors-between-the JSE's AltX variables. Expectedly, in Model 2, Model 3 and Model 4 (Model 5 exhibited a high degree of badness of fit statistics), 66%, 66% and 78% of the dependent variable was jointly explained by the independent variables respectively.

#### 6.4.9 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 3 SURVEY RESPONSE

ANNs was used to predict various Hypothesis 3 survey response iterations. In Figure 6.3 the multilayer perceptron network for Hypothesis 3 response variable has 3 layers, 1 bias term and 1 output (i.e. *ScapLE*). More so, in the case processing summary, the sample had  $N = 31$  or 66% (with *relative error* 0.021) *Training* parameters and  $N = 16$  or 34% (with *relative error* 0.015) *Testing* parameters, which comprised on 47 valid responses and 1 excluded response. Also, the hidden layer 1 had a *Bias* output layer of -0.229 (i.e. *ScapLE*), H(1:1)

had an output layer of 0.898 (i.e. *ScapLE*), H(1:2) had an output layer of -0.592 (i.e. *ScapLE*) and H(1:3) had an output layer of -0.604 (i.e. *ScapLE*). The rich insights provided by the perceptron ANNs ultimately showed that the independent variables had a normalised ranked importance of 100% for *Item4b*, 88% for *Item4g*, 82% for *Item4a*, 76% for *Item4f*, 70% for *Item4c*, 69% for *Item4e* and 60% for *Item4d*. This implies that listed firms on the JSE's AltX should consider the importance of the lower bourse as a veritable tool for pooling funds for expansionary purposes such as acquisitions and joint ventures, as well as, brace up to the fact that a combination of miscellaneous factors can trigger the share capital growth of listed firms, which in turn leads to improved performance/expansion. As such, increased share capital levels have a net positive and significant influence on the ability of the JSE's AltX listed firms' capacity to expand and perform optimally i.e. above their unlisted peers in the short, medium and long-term period, ceteris paribus.



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.3: Multilayer perceptron network diagram for Hypothesis 3 survey response (Source: Authors' compilation)**

#### 6.4.10 SURVEY RESPONSE HYPOTHESIS 4 FREQUENCIES STATISTICS

Given that one of the main purposes of this study is to use a rational, specific and targeted approach to initiate and sustain the competencies of all the listed firms on the JSE's AltX, so that these companies can be strengthened over time and thus lead to performance optimisation in the long run, the researcher considered it crucial to probe into the mandatory compliance requirement of the JSE's AltX. By so doing, it would become possible to ascertain the real impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms. The researcher intends to answer the research question "How does the compliance requirement of the AltX impact on the B-BBEE score performance of listed firms?" through the determination of the impact that the B-BBEE compliance/exchange guidelines has on the JSE's AltX listed firm's performance. This led to the formulation of Hypothesis 4: The higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score. Part V of the survey questionnaire tried to ascertain this impact via the responses of participants in this section. In Table 6.9 the frequencies statistics for the survey response in hypothesis 4 was presented. For *Item5a* "The implementation of good governance systems like the B-BBEE by listed firms makes them attractive to all stakeholders" 9 or 19% of the respondents either strongly agreed or were undecided, 23 or 48% of the respondents agreed, 4 or 8% of the respondents disagreed, while 3 or 6% of the respondents strongly disagreed about the impact of the JSE's AltX in this critical area. The *mean* (3.65), *standard error of mean* (0.156) and *standard deviation* (1.082) of *Item5a* indicated that the average response leaned away from the neutral towards a positive angle with a low level of variation. Next, for *Item5b* "Listing on the AltX made us to secure a BEE enabler for the group, thus adding substantial value to the firm's proposition" 3 or 6% of the respondents strongly agreed, 14 or 29% of the respondents agreed, 13 or 27% of the respondents were either undecided or disagreed, while 4 or 8% of the respondents strongly disagreed about the impact of the JSE's AltX in this contentious part (with 1 missing response). The *mean* (2.98), *standard error of mean* (0.159) and *standard deviation* (1.093) of *Item5b* specified that the average response leaned a little bit in the direction of the neutral from a negative position with a small disparity.

Furthermore, for *Item5c* "The mandatory compliance to the B-BBEE act enhanced our reputation, ratings and improved our performance" 2 or 4% of the respondents strongly agreed, 18 or 38% of the respondents agreed, 12 or 25% of the respondents were undecided, 9 or 19% of the respondents disagreed, while 6 or 13% of the respondents strongly disagreed about the



**Table 6.9 Survey response hypothesis 4 frequencies statistics**

	N		Mean	Std. Error of Mean	Median	Mode	Std. Deviation	Variance	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing												
Item5a	48	0	3.65	0.156	4	4	1.082	1.17	-0.92	0.343	0.483	0.674	1	5
Item5b	47	1	2.98	0.159	3	4	1.093	1.195	-0.061	0.347	-0.804	0.681	1	5
Item5c	47	1	3.02	0.165	3	4	1.132	1.282	-0.419	0.347	-0.839	0.681	1	5
Item5d	47	1	3.11	0.167	3	3	1.147	1.315	-0.397	0.347	-0.51	0.681	1	5
Item5e	47	1	3.77	0.140	4	4	0.960	0.922	-0.887	0.347	0.594	0.681	1	5
Item5f	46	2	3.11	0.168	3	4	1.140	1.299	-0.222	0.35	-0.849	0.688	1	5
Item5g	47	1	3.40	0.163	4	4	1.116	1.246	-0.875	0.347	0.212	0.681	1	5
CompReq	48	0	3.27	0.118	3.286	3.00 <sup>a</sup>	0.816	0.665	-0.244	0.343	-0.198	0.674	1.29	5

*N* = 48, *Item5a* The implementation of good governance systems like the B-BBEE by listed firms makes them attractive to all stakeholders, *Item5b* Listing on the AltX made us to secure a BEE enabler for the group, thus adding substantial value to the firm's proposition, *Item5c* The mandatory compliance to the B-BBEE act enhanced our reputation, ratings and improved our performance, *Item5d* Listing enabled firms to deliver community development engagement programmes that are environmentally sustainable, *Item5e* Compliance ensures participation in all tendering processes, application for licences, permits and public sector procurement, *Item5f* The impact of our compliance with the B-BBEE requirement was that we had access to tax incentives and financial grants, *Item5g* A combination of miscellaneous factors instigated by compliance helped to improve our B-BBEE score performance, *CompReq* Impact of compliance requirements on the B-BBEE score performance of listed firms.

Impact of the JSE's AltX in this crucial area (with 1 missing response). The *mean* (3.02), *standard error of mean* (0.165) and *standard deviation* (1.132) of *Item5c* indicated that the average response leaned away from the neutral towards a positive perspective with a low level of variation. Subsequently, for *Item5d* "Listing enabled firms to deliver community development engagement programmes that are environmentally sustainable" 4 or 8% of the respondents strongly agreed, 15 or 31% of the respondents agreed, 16 or 33% of the respondents were undecided, while 6 or 13% of the respondents either disagreed or strongly disagreed about the impact of the JSE's AltX in this vital section. The *mean* (3.11), *standard error of mean* (0.167) and *standard deviation* (1.147) of *Item5d* indicated that the average response leaned from the neutral level towards an optimistic viewpoint with a low variance (with 1 missing response). Next, for *Item5e* "Compliance ensures participation in all tendering processes, application for licences, permits and public sector procurement" 9 or 19% of the respondents strongly agreed, 25 or 52% of the respondents agreed, 7 or 15% of the respondents were undecided, 5 or 10% of the respondents disagreed, while 1 or 2% of the respondents strongly disagreed about the impact of the JSE's AltX in this important area (with 1 missing response). The *mean* (3.77), *standard error of mean* (0.140) and *standard deviation* (0.960) of *Item5e* indicated that the average response leaned slightly away from the neutral towards a positive angle with a low level of variation.

Afterwards, for *Item5f* "The impact of our compliance with the B-BBEE requirement was that we had access to tax incentives and financial grants" 4 or 8% of the respondents either strongly agreed or strongly disagreed, 16 or 33% of the respondents agreed, while 11 or 23% of the respondents were either undecided or disagreed about the impact of the JSE's AltX in this critical section (with 2 missing responses). The *mean* (3.11), *standard error of mean* (0.168) and *standard deviation* (1.140) of *Item5f* indicated that the average response was positive with a low level of variance. Then, for *Item5g* "A combination of miscellaneous factors instigated by compliance helped to improve our B-BBEE score performance" 5 or 10% of the respondents either strongly agreed or strongly disagreed, 22 or 46% of the respondents agreed, 12 or 25% of the respondents were undecided, while 3 or 6% of the respondents disagreed about the impact of the JSE's AltX in this critical area. There was 1 missing response in this section representing about 2% of the total participant's responses. The *mean* (3.40), *standard error of mean* (0.163) and *standard deviation* (1.116) of *Item5g* indicated that the average response leaned slightly from the neutral point towards a positive perspective with a low level of variability.

Objectively, the researcher was primarily concerned with ascertaining the benefits or otherwise of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms. It was anticipated that this advantage would be of varying significance based on the industrial sector where these firms operate in. Consequently, the dependent variable *CompReq* was designed to capture the impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms. This construct had a positive mean of 3.27, standard error of mean of 0.118 and standard deviation of 0.816. The MLM econometrics analysis implemented in the next section is expected to identify the within and between relationships/variation amongst these parameters. Essentially, this would assist the researcher in providing deep refreshing insights about the desired level of support (based on the ensuing effect) that is expected to be strategically provided by the JSE's AltX to listed firms.

#### 6.4.11 HYPOTHESIS 4 SURVEY RESPONSE MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.10 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 4 with *CompReq* i.e. impact of compliance requirements on the B-BBEE score performance of listed firms as the dependent variable. Model 1 of Table 6.10 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms. Since no predictors were included in the model at Level 1, the intercept is equal to the *CompReq* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms by 3.267. This can be further illustrated using the test ( $t$ ) statistic, which is presented as  $t$  (degrees of freedom) =  $t$  statistic,  $p$  =  $p$  value.

This implies that the respondents agreed that ( $M = 3.267$ ,  $SE = 0.117$ ) the impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(48) = 28.046$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 contains estimated within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positively significant at all levels, however, the between-group variance of the random intercepts (i.e. variation across groups) were

positive but not significant at Levels 2 and 3. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -57.82 with a *deviance* statistic of 115.65, while its *AIC* was 121.65, which makes a lot of sense in the following model analysis.

**Table 6.10 Hypothesis 4 MLM equation for the survey response**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5
$\beta_0$	3.267*** (0.117)	1.756*** (0.389)	1.739*** (0.397)	1.719*** (0.345)	1.655*** (0.297)
Item5a		0.274** (0.085)	0.222* (0.087)	0.285** (0.087)	0.138 (0.122)
Item5b		-0.028 (0.093)	-0.040 (0.100)	-0.004 (0.098)	-0.158 (0.111)
Item5c		0.030 (0.113)	0.053 (0.119)	-0.007 (0.106)	0.199** (0.072)
Item5d		-0.119 (0.077)	-0.115 (0.081)	-0.107 (0.073)	-0.034 (0.047)
Item5e		0.110 (0.084)	0.099 (0.088)	0.091 (0.080)	0.029 (0.050)
Item5f		0.094 (0.082)	0.095 (0.087)	0.081 (0.076)	0.042 (0.073)
Item5g		0.145 (0.087)	0.194* (0.089)	0.178 (0.092)	0.149 (0.118)
$\sigma_e^2$	0.652*** (0.133)	0.307*** (0.072)	0.349*** (0.102)	0.259*** (0.000)	0.031* (0.015)
$\sigma_v^2$	9.24e-23 (2.58e-21)		9.73e-15 (0.000)	0.000 (0.000)	0.000 (0.000)
$\sigma_u^2$	5.74e-21 (6.25e-20)	0.068 (0.089)	0.014 (0.082)	0.006 (0.010)	0.032 (0.033)
$\sigma_v^2 \times \sigma_u^2$				0.000 (0.000)	0.016 (0.000)
Log-likelihood	-57.82	-42.83	-43.76	-42.97	-45.96
Deviance	115.65	85.66	87.51	85.95	91.92
AIC	121.65	105.66	107.51	121.95	137.92
Fixed effects	No	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes

$N = 48$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX variables,  $\sigma_u^2$  the level two variance i.e. sector,  $\sigma_v^2$  the level three variance i.e. location, *AIC* Akaike's Information Criterion. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues.  
\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Next, Model 2 of Table 6.10 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = -42.83, *deviance* = 85.66, *AIC* = 105.66, *Wald chi2(7)* = 43.27,  $p < 0.001$ ). Hence, the results from Hypothesis 4 tests indicated that the higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score. This is consistent with findings from similar studies (Mathura, 2009; Black Management Forum,

2012; Akinsomi et al., 2016). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of 85.66 against 241.817 and 115.65 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 1.756 ( $SE = 0.389$ ,  $p < 0.001$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 1.756 in the compliance requirements of the JSE's AltX on the B-BBEE score performance of listed firms. That said, as expected the implementation of good governance systems like the B-BBEE by listed firms makes them more attractive to all stakeholders, since the coefficient  $\beta_1$  (0.274) of *Item5a* was positive and significant ( $SE = 0.085$ ,  $p < 0.01$ ). Also, there was evidence of within-group variation in Model 2 with residual estimate of 0.307 ( $SE = 0.072$ ;  $p < 0.001$ ).

Subsequently, in Model 3 of Table 6.10 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were similar to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 4 was fully supported ( $\log likelihood = -43.76$ ,  $deviance = 87.51$ ,  $AIC = 107.51$ ,  $Wald\ chi2(7) = 38.83$ ,  $p < 0.001$ ). The coefficient of the intercept  $\beta_0$  (1.739) was positive and significant ( $SE = 0.397$ ,  $p < 0.001$ ), the coefficient of the *Item2a*  $\beta_1$  (0.452) was positive and significant ( $SE = 0.082$ ,  $p < 0.001$ ), while the coefficient of the *Item5a*  $\beta_1$  (0.222) was positive and significant ( $SE = 0.087$ ,  $p < 0.05$ ). However, the researcher observed that a combination of miscellaneous factors instigated by the JSE's AltX compliance requirements helped to boost the B-BBEE score performance of listed firms i.e. *Item5g* ( $\beta_7 = 0.194$ ,  $SE = 0.089$ ,  $p < 0.05$ ). This is consistent with the findings of prior studies (Mathura, 2009; Black Management Forum, 2012; Akinsomi et al., 2016). Likewise, there was evidence of within-group variation in Model 3 with its residual estimate of 0.349 ( $SE = 0.102$ ;  $p < 0.001$ ) being very positive and significant.

Interestingly, Model 3's report was not more robust than both Model 2 and 1 given its slightly higher  $\log likelihood$  and *deviance* statistic, which was within the stipulated range of  $< +2$  of the previous models (IBM, 2020). Nevertheless, the *AIC* was slightly higher than Model 2's report, perhaps because it penalises the goodness of fit statistics data when any additional variable is added to a model. Afterwards, in Model 4 of Table 6.10 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 4's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = -42.97$ ,  $deviance = 85.95$ , *AIC*

= 121.95,  $p < 0.001$ ). More so, the goodness of fit *deviance* statistic was not more robust than the previous models, since it has a slightly larger test statistic. Also, the *AIC* was larger due to penalties arising from the addition of more parameters in the model. The ensuing results from Model 4 indicated that the test variable outcomes were similar to that of Model 3. The coefficient of the intercept  $\beta_0$  (1.719) was positive and strongly significant ( $SE = 0.345$ ,  $p < 0.001$ ), while the coefficient of the *Item5a*  $\beta_1$  (0.285) was positive and significant ( $SE = 0.087$ ,  $p < 0.01$ ). Also, there was evidence of within-group variation in Model 4 due to its significant residual estimate of 0.259 ( $SE = 0.000$ ;  $p < 0.001$ ).

Lastly, in Model 5 of Table 6.10 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the interaction effects command. The estimates suggests that Hypothesis 4's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log \text{likelihood} = -45.96$ ,  $\text{deviance} = 91.92$ ,  $AIC = 137.92$ ,  $p < 0.001$ ). But the fit statistics was less robust when compared to the other models. Meanwhile, the resultant outcomes from Model 5 showed that the test variable results were comparable to that of Model 3 and 4. The coefficient of the intercept  $\beta_0$  (1.655) was positive and very significant ( $SE = 0.297$ ,  $p < 0.001$ ), the coefficient of the *Item5c*  $\beta_3$  (0.199) was positive and significant ( $SE = 0.072$ ,  $p < 0.01$ ). This implies that the mandatory compliance to the B-BBEE act by listed firms enhanced their company's reputation, ratings and also assisted in improving firm performance. In addition, the above model showed that there was evidence of within-group variation in Model 5 due to its significant residual estimate of 0.031 ( $SE = 0.015$ ;  $p < 0.05$ ). Furthermore, the random effects covariance structures intercepts for the interaction effects were significant for *Item5axItem5b* and *Item5axItem5g*. Similarly, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit to the preceding model (Leckie, 2013).

Equally, in Model 1  $VPC_v = 0$ ,  $VPC_u = 0$  and  $VPC_e = 1.0$ , this implied that there was no evidence of significant variation between locations, and within-locations-between-sectors, while it was observed that about 100% of the variation occurred within-sectors-between-the JSE's AltX variables. In Model 2  $VPC_u = 0.18$  and  $VPC_e = 0.82$ , suggests that there exists 18% variations within-locations-between-sectors, while about 82% of the variation occurred within-sectors-between-the JSE's AltX variables. Likewise, in Model 3  $VPC_v = 0$ ,  $VPC_u = 0.04$  and  $VPC_e = 0.96$ , indicates that there was no evidence of significant variation between locations, but there exists 4% variations within-locations-between-sectors, while about 96% of the variation occurred within-sectors-between-the JSE's AltX variables. Also, in Model 4  $VPC_v = 0$ ,  $VPC_u = 0.02$  and  $VPC_e = 0.98$ , infers that there was no evidence of significant variation between

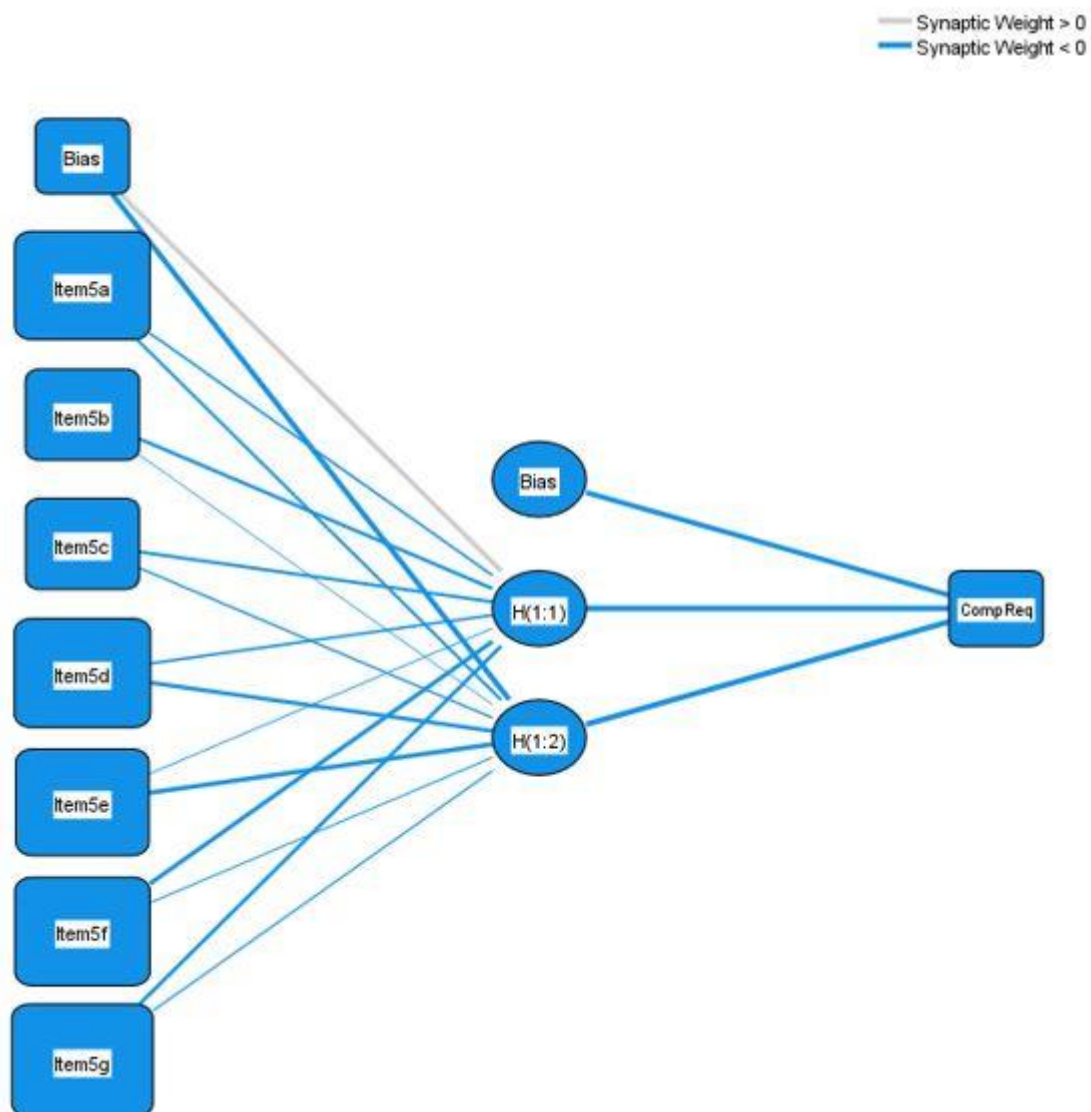
locations, but there exists 2% variations within-locations-between-sectors, while about 98% of the variation occurred within-sectors-between-the JSE's AltX variables. Correspondingly, in Model 5  $VPC_v = 0$ ,  $VPC_u = 0.51$  and  $VPC_e = 0.49$ , implies that there was no evidence of significant variation between locations, but there exists 51% variations within-locations-between-sectors, while about 49% of the variation occurred within-sectors-between-the JSE's AltX variables. This finding reveals that increased regulation and interaction effects can cause significant changes in listed firms' performance, *ceteris paribus* (Kruger, 2014; Van der Merwe and Ferreira, 2014; Mzilikazi, 2015; Akinsomi et al., 2016; Mehta and Ward, 2017; Mokgobinyane, 2017; Pike, Puchert, and Chinyamurindi, 2018). Expectedly, in Model 2, Model 3, Model 4 and Model 5, 39%, 35%, 44% and 45% of the dependent variable was jointly explained by the independent variables respectively.

#### **6.4.12 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 4 SURVEY RESPONSE**

ANNs was used to predict various Hypothesis 4 survey response iterations. In Figure 6.4 the multilayer perceptron network for Hypothesis 4 response variable has 2 layers, 1 bias term and 1 output (i.e. *CompReq*). More so, in the case processing summary, the sample had  $N = 36$  or 78% (with *relative error* 0.001) *Training* parameters and  $N = 10$  or 22% (with *relative error* 0.011) *Testing* parameters, which comprised on 46 valid responses and 2 excluded responses. Also, the hidden layer 1 had a *Bias* output layer of -0.660 (i.e. *CompReq*), H(1:1) had an output layer of -1.664 (i.e. *CompReq*) and H(1:2) had an output layer of -1.451 (i.e. *CompReq*). The rich insights provided by the perceptron ANNs ultimately showed that the independent variables had a normalised ranked importance of 100% for *Item5g*, 95% for *Item5d*, 94% for *Item5a*, 94% for *Item5f*, 92% for *Item5e*, 71% for *Item5b* and 71% for *Item5c*.

This implies that listed firms must seriously consider the fact that a combination of miscellaneous factors activated by the JSE's AltX compliance requirements facilitated an improvement of the B-BBEE score performance of quoted firms. Furthermore, the findings from the empirical analysis reveals that listing enabled firms to deliver community development/engagement programmes that are environmentally sustainable. This made these companies to become socially aware and responsible to the issues confronting their business or host community. Also, it is quite clear that the implementation of good governance systems like the B-BBEE by listed firms made them to become more attractive to all stakeholders, whether local or international (Mathura, 2009; Black Management Forum, 2012; Akinsomi et al., 2016). More, importantly, compliance with the B-BBEE requirements which is being championed by the JSE's AltX enabled registered companies to have easy/free access to tax

incentives, as well as financial grants among others. In conclusion, the JSE’s AltX requirements ensured that listed firms have an ingrained philosophy of environmental discipline and corporate citizenships – as agents of social change in their communities. It must be noted that such enormous responsibilities also come with some pecks, such as their preferential selection/participation in government tendering process and contract selection/award system. This trend augurs well for these firms in the short, medium and long-term period of their operations, *ceteris paribus*.



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.4: Multilayer perceptron network diagram for Hypothesis 4 survey response (Source: Authors’ compilation)**

### 6.5 SECONDARY DATA ANALYSIS

As stated in the previous chapter, the researcher conducted a secondary data analysis to reinforce the findings from the primary data analysis given the



inconclusive arguments in earlier studies with conflicting outcomes. This informs the researcher's investigation to find out if really listing on the JSE's AltX impacts positively on firm performance. Several rigorous studies in finance, business management and economics have used various empirical datasets and methodologies to arrive at different conclusions. In particular, quantitative studies was carried out by Mlonzi et al. (2010), Correia and Levinson (2012), Kruger (2014), Mashaba (2014), Shadung (2014), Heerden (2015), Makhabeni (2015), Beneke (2016), Harvey (2016), Pelcher (2017), Makoko and Muzindutsi (2018) at master's and doctoral level, and in journal articles and conference presentations, where arguments for and against the impact of listing on the JSE's AltX was presented.

After, a rigorous validity and reliability testing process, 26 indicator variables were selected to be used in the secondary data analysis procedure. However, as discussed in the preceding chapter, 10 indicator variables were dropped for not meeting the recommended threshold figures from the pre-selected 36 indicator variables due to poor internal consistency and multicollinearity concerns (Nunnally, 1978; Garson, 2016; Hair, Hult, Ringle and Sarstedt, 2017). Consequently, the researcher used IBM SPSS Statistics 27 statistical software package to test the research hypotheses given its robust platform for conducting a MLM econometric equation. As noted in the previous chapter, in order to test Hypothesis 1 which centres on the JSE's AltX effect, 12 variables indicators were selected. In order to test Hypothesis 2 which focuses on the JSE's AltX impact on the level of entrepreneurship levels in South Africa, 13 macroeconomic variables were selected. Similarly, in order to test Hypothesis 3 which concerns the JSE's AltX effect on share capitalisation levels, 13 variables indicators were selected. Lastly, in order to test Hypothesis 4 which centres on the JSE's AltX compliance requirements, 12 macroeconomic variables were selected.

## 6.6 CORRELATION STATISTICS FOR THE SECONDARY DATA

The Spearman's rank *rho* correlation coefficient depicted in Table 6.11 is a nonparametric monotonic function that measures the relationship two variables. High correlation is close to or equal to 1, while low correlation is near or equal to 0 (Richardson, 2015). Similarly, a positive correlation coefficient denotes an increasing monotonic trend between two variables, a negative correlation coefficient signifies a declining monotonic trend between two variables (Corder and Foreman 2014). For the secondary data correlation statistics analysis, the interpretation of the results indicates a fair degree of correlation between the variables, yet, even though a correlation coefficient of 0.75 and above is considered high, a correlation coefficient of 0.36 and below might also be considered too low. Several scholars have linked high correlation as evidence

**Table 6.11 Descriptive statistics and correlations for the secondary data**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 AltXMarketCap	1.00	0.77***	0.27	0.44	0.31	0.53*	0.92***	0.66**	0.78***	0.74***	0.61**	0.70**	0.42	0.56*
2 Turnover	0.77***	1.00	0.32	0.81***	0.41	0.73***	0.88***	0.92***	0.86***	0.89***	0.61**	0.95***	0.43	0.56*
3 OperatingProfit/Loss	0.27	0.32	1.00	0.14	-0.54*	0.25	0.41	0.28	0.06	0.08	0.79***	0.33	-0.12	0.37
4 Delistings	0.44	0.81***	0.14	1.00	0.46	0.70**	0.59*	0.82***	0.72***	0.70**	0.23	0.75***	0.16	0.37
5 Transfers	0.31	0.41	-0.54*	0.46	1.00	0.35	0.21	0.40	0.60*	0.59*	-0.27	0.41	0.41	0.30
6 Goodwill	0.53*	0.73***	0.25	0.70**	0.35	1.00	0.69**	0.86***	0.50*	0.58*	0.35	0.84***	0.42	0.62**
7 Investments&Loans	0.92***	0.88***	0.41	0.59*	0.21	0.69**	1.00	0.78***	0.78***	0.78***	0.69**	0.85***	0.39	0.54*
8 ForeignAssets	0.66**	0.92***	0.28	0.82***	0.40	0.86***	0.78***	1.00	0.76***	0.81***	0.49*	0.93***	0.40	0.62**
9 ValueAdded	0.78***	0.86***	0.06	0.72***	0.60*	0.50*	0.78***	0.76***	1.00	0.94***	0.36	0.75***	0.32	0.44
10 Employed	0.74***	0.89***	0.08	0.70**	0.59*	0.58*	0.78***	0.81***	0.94***	1.00	0.38	0.81***	0.45	0.53*
11 Ebitda	0.61**	0.61**	0.79***	0.23	-0.27	0.35	0.69**	0.49*	0.36	0.38	1.00	0.58*	0.20	0.34
12 TotalEquity&Liabilities	0.70**	0.95***	0.33	0.75***	0.41	0.84***	0.85***	0.93***	0.75***	0.81***	0.58*	1.00	0.43	0.61**
13 SMMEsSouthAfrica	0.42	0.43	-0.12	0.16	0.41	0.42	0.39	0.40	0.32	0.45	0.20	0.43	1.00	0.64**
14 CurrentRatio	0.56*	0.56*	0.37	0.37	0.30	0.62**	0.54*	0.62**	0.44	0.53*	0.34	0.61**	0.64**	1.00
15 EarningsYield	-0.57*	-0.80***	0.10	-0.71***	-0.60*	-0.38	-0.65**	-0.63**	-0.88***	-0.83***	-0.25	-0.70**	-0.18	-0.16
16 QuickRatio	0.54*	0.54*	0.38	0.35	0.29	0.61**	0.53*	0.60*	0.42	0.52*	0.35	0.60*	0.64**	0.99***
17 ROA	-0.33	-0.61**	-0.42	-0.68**	0.10	-0.36	-0.44	-0.56*	-0.41	-0.40	-0.46	-0.50*	-0.09	-0.29
18 Patents&Trademarks	0.66**	0.70**	0.35	0.61**	0.27	0.90***	0.78***	0.76***	0.48*	0.53*	0.42	0.79***	0.49*	0.70**
19 TeaRate	0.60*	0.83***	0.14	0.72***	0.35	0.68**	0.74***	0.74***	0.71**	0.76***	0.30	0.74***	0.52*	0.55*
20 CashInvestmentActivities	-0.62**	-0.44	-0.30	-0.32	-0.18	-0.43	-0.69**	-0.39	-0.53*	-0.53*	-0.32	-0.49*	-0.06	-0.41
21 ForeignLiabilities	0.29	0.58*	-0.12	0.61**	0.33	0.79***	0.46	0.72***	0.33	0.41	0.05	0.65**	0.44	0.38
22 ForeignEmployees	0.60*	0.81***	0.20	0.74***	0.41	0.73***	0.76***	0.82***	0.81***	0.82***	0.36	0.86***	0.13	0.38
23 ProfitAfterInterest&Tax	0.48*	0.40	0.92***	0.17	-0.43	0.29	0.55*	0.35	0.18	0.21	0.88***	0.40	-0.06	0.36
24 Salaries&Wages	0.78***	0.88***	0.07	0.74***	0.60*	0.50*	0.78***	0.77***	0.99***	0.95***	0.38	0.77***	0.32	0.44
25 ValueofTransactions	0.79***	0.85***	0.42	0.67**	0.15	0.81***	0.91***	0.82***	0.68**	0.67**	0.62**	0.85***	0.33	0.50*
26 JSEAltX	0.9***	0.53*	-0.02	0.32	0.37	0.39	0.75***	0.48	0.71***	0.62**	0.25	0.46	0.27	0.40
27 BBBEEScorecomposite	0.81***	0.94***	0.25	0.71***	0.45	0.63**	0.82***	0.81***	0.85***	0.84***	0.57*	0.88***	0.44	0.56*

Spearman's rho Correlation; N = 48; ROA Return on assets, Ebitda Earnings before interest, tax, depreciation and amortization; BBBEEScorecomposite Broad-Based Black Economic Empowerment; \*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001

**Table 6.11 Descriptive statistics and correlations for the secondary data (cont.)**

Variables	15	16	17	18	19	20	21	22	23	24	25	26	27
1 AltXMarketCap	-0.57 <sup>*</sup>	0.54 <sup>*</sup>	-0.33	0.66 <sup>**</sup>	0.60 <sup>*</sup>	-0.62 <sup>**</sup>	0.29	0.60 <sup>*</sup>	0.48 <sup>*</sup>	0.78 <sup>***</sup>	0.79 <sup>***</sup>	0.89 <sup>***</sup>	0.81 <sup>***</sup>
2 Turnover	-0.80 <sup>***</sup>	0.54 <sup>*</sup>	-0.61 <sup>**</sup>	0.70 <sup>**</sup>	0.83 <sup>***</sup>	-0.44	0.58 <sup>*</sup>	0.81 <sup>***</sup>	0.40	0.88 <sup>***</sup>	0.85 <sup>***</sup>	0.53 <sup>*</sup>	0.94 <sup>***</sup>
3 OperatingProfit/Loss	0.10	0.38	-0.42	0.35	0.14	-0.30	-0.12	0.20	0.92 <sup>***</sup>	0.07	0.42	-0.02	0.25
4 Delistings	-0.71 <sup>***</sup>	0.35	-0.68 <sup>**</sup>	0.61 <sup>**</sup>	0.72 <sup>***</sup>	-0.32	0.61 <sup>**</sup>	0.74 <sup>***</sup>	0.17	0.74 <sup>***</sup>	0.67 <sup>**</sup>	0.32	0.71 <sup>***</sup>
5 Transfers	-0.60 <sup>*</sup>	0.29	0.10	0.27	0.35	-0.18	0.33	0.41	-0.43	0.60 <sup>*</sup>	0.15	0.37	0.45
6 Goodwill	-0.38	0.61 <sup>**</sup>	-0.36	0.90 <sup>***</sup>	0.68 <sup>**</sup>	-0.43	0.79 <sup>***</sup>	0.73 <sup>***</sup>	0.29	0.50 <sup>*</sup>	0.81 <sup>***</sup>	0.39	0.63 <sup>**</sup>
7 Investments&Loans	-0.65 <sup>**</sup>	0.53 <sup>*</sup>	-0.44	0.78 <sup>***</sup>	0.74 <sup>***</sup>	-0.69 <sup>**</sup>	0.46	0.76 <sup>***</sup>	0.55 <sup>*</sup>	0.78 <sup>***</sup>	0.91 <sup>***</sup>	0.75 <sup>***</sup>	0.82 <sup>***</sup>
8 ForeignAssets	-0.63 <sup>**</sup>	0.60 <sup>*</sup>	-0.56 <sup>*</sup>	0.76 <sup>***</sup>	0.74 <sup>***</sup>	-0.39	0.72 <sup>***</sup>	0.82 <sup>***</sup>	0.35	0.77 <sup>***</sup>	0.82 <sup>***</sup>	0.48	0.81 <sup>***</sup>
9 ValueAdded	-0.88 <sup>***</sup>	0.42	-0.41	0.48 <sup>*</sup>	0.71 <sup>**</sup>	-0.53 <sup>*</sup>	0.33	0.81 <sup>***</sup>	0.18	0.99 <sup>***</sup>	0.68 <sup>**</sup>	0.71 <sup>***</sup>	0.85 <sup>***</sup>
10 Employed	-0.83 <sup>***</sup>	0.52 <sup>*</sup>	-0.40	0.53 <sup>*</sup>	0.76 <sup>***</sup>	-0.53 <sup>*</sup>	0.41	0.82 <sup>***</sup>	0.21	0.95 <sup>***</sup>	0.67 <sup>**</sup>	0.62 <sup>**</sup>	0.84 <sup>***</sup>
11 Ebitda	-0.25	0.35	-0.46	0.42	0.30	-0.32	0.05	0.36	0.88 <sup>***</sup>	0.38	0.62 <sup>**</sup>	0.25	0.57 <sup>*</sup>
12 TotalEquity&Liabilities	-0.70 <sup>**</sup>	0.60 <sup>*</sup>	-0.50 <sup>*</sup>	0.79 <sup>***</sup>	0.74 <sup>***</sup>	-0.49 <sup>*</sup>	0.65 <sup>**</sup>	0.86 <sup>***</sup>	0.40	0.77 <sup>***</sup>	0.85 <sup>***</sup>	0.46	0.88 <sup>***</sup>
13 SMMEsSouthAfrica	-0.18	0.64 <sup>**</sup>	-0.09	0.49 <sup>*</sup>	0.52 <sup>*</sup>	-0.06	0.44	0.13	-0.06	0.32	0.33	0.27	0.44
14 CurrentRatio	-0.16	0.99 <sup>***</sup>	-0.29	0.70 <sup>**</sup>	0.55 <sup>*</sup>	-0.41	0.38	0.38	0.36	0.44	0.50 <sup>*</sup>	0.40	0.56 <sup>*</sup>
15 EarningsYield	1.00	-0.13	0.36	-0.34	-0.66 <sup>**</sup>	0.42	-0.36	-0.76 <sup>***</sup>	0.00	-0.89 <sup>***</sup>	-0.53 <sup>*</sup>	-0.50 <sup>*</sup>	-0.78 <sup>***</sup>
16 QuickRatio	-0.13	1.00	-0.27	0.70 <sup>**</sup>	0.52 <sup>*</sup>	-0.40	0.36	0.36	0.37	0.41	0.48	0.38	0.54 <sup>*</sup>
17 ROA	0.36	-0.27	1.00	-0.29	-0.57 <sup>*</sup>	0.00	-0.42	-0.35	-0.45	-0.44	-0.54 <sup>*</sup>	-0.07	-0.57 <sup>*</sup>
18 Patents&Trademarks	-0.34	0.70 <sup>**</sup>	-0.29	1.00	0.64 <sup>**</sup>	-0.59 <sup>*</sup>	0.64 <sup>**</sup>	0.62 <sup>**</sup>	0.38	0.49 <sup>*</sup>	0.81 <sup>***</sup>	0.55 <sup>*</sup>	0.61 <sup>**</sup>
19 TeaRate	-0.66 <sup>**</sup>	0.53 <sup>*</sup>	-0.57 <sup>*</sup>	0.64 <sup>**</sup>	1.00	-0.33	0.71 <sup>***</sup>	0.61 <sup>**</sup>	0.13	0.72 <sup>***</sup>	0.76 <sup>***</sup>	0.45	0.76 <sup>***</sup>
20 CashInvestmentActivities	0.42	-0.40	0.00	-0.59 <sup>*</sup>	-0.33	1.00	-0.04	-0.65 <sup>**</sup>	-0.44	-0.51 <sup>*</sup>	-0.52 <sup>*</sup>	-0.69 <sup>**</sup>	-0.36
21 ForeignLiabilities	-0.36	0.36	-0.42	0.64 <sup>**</sup>	0.71 <sup>***</sup>	-0.04	1.00	0.48	-0.12	0.34	0.61 <sup>**</sup>	0.21	0.47
22 ForeignEmployees	-0.76 <sup>***</sup>	0.36	-0.35	0.62 <sup>**</sup>	0.61 <sup>**</sup>	-0.65 <sup>**</sup>	0.48	1.00	0.27	0.80 <sup>***</sup>	0.77 <sup>***</sup>	0.54 <sup>*</sup>	0.73 <sup>***</sup>
23 ProfitAfterInterest&Tax	0.00	0.37	-0.45	0.38	0.13	-0.44	-0.12	0.27	1.00	0.20	0.50 <sup>*</sup>	0.19	0.34
24 Salaries&Wages	-0.89 <sup>***</sup>	0.41	-0.44	0.49 <sup>*</sup>	0.72 <sup>***</sup>	-0.51 <sup>*</sup>	0.34	0.80 <sup>***</sup>	0.20	1.00	0.68 <sup>**</sup>	0.69 <sup>**</sup>	0.88 <sup>***</sup>
25 ValueofTransactions	-0.53 <sup>*</sup>	0.48	-0.54 <sup>*</sup>	0.81 <sup>***</sup>	0.76 <sup>***</sup>	-0.52 <sup>*</sup>	0.61 <sup>**</sup>	0.77 <sup>***</sup>	0.50 <sup>*</sup>	0.68 <sup>**</sup>	1.00	0.62 <sup>**</sup>	0.78 <sup>***</sup>
26 JSEAltX	-0.50 <sup>*</sup>	0.38	-0.07	0.55 <sup>*</sup>	0.45	-0.69 <sup>**</sup>	0.21	0.54 <sup>*</sup>	0.19	0.69 <sup>**</sup>	-0.62 <sup>**</sup>	1.00	0.57 <sup>*</sup>
27 BBBEScorecomposite	-0.78 <sup>***</sup>	0.54 <sup>*</sup>	-0.57 <sup>*</sup>	0.61 <sup>**</sup>	0.76 <sup>***</sup>	-0.36	0.47	0.73 <sup>***</sup>	0.34	0.88 <sup>***</sup>	0.78 <sup>***</sup>	0.57 <sup>*</sup>	1.00

Spearman's  $\rho$  Correlation;  $N = 48$ ;  $ROA$  Return on assets,  $Ebitda$  Earnings before interest, tax, depreciation and amortization;  $BBBEScorecomposite$  Broad-Based Black Economic Empowerment; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

of multicollinearity, such conclusions should not be in a haste because some disciplines like medical research assumes that high correlation coefficients indicate a good fit and accuracy in a dataset. Given that validity and reliability tests have been conducted successfully, omitting any suspicious variable relationships could lead to biased estimates which informs the use of MLM testing in this thesis to determine the impact of clustering on the empirical results.

### 6.7.1 SECONDARY DATA HYPOTHESIS 1 FREQUENCIES STATISTICS

As discussed in the previous section, given that one of the purposes of this study deals with the conceptual identification of the operational processes of the JSE's AltX. The researcher intends to answer the research question "Does listing on the JSE's AltX impact on firm performance?" through the determination of the impact that the JSE's AltX has on listed firm's performance. This led to the formulation of Hypothesis 1: Firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs. Consequently, various relevant macroeconomic variables were put together in order to ascertain this impact. Table 6.12 shows the frequencies statistics for the JSE AltX secondary data which was used to test hypothesis 1. As indicated in the variable identification section, *JSEAltX* which is the dependent variable is a proxy for the product of the total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies. The resultant frequencies statistics were *mean* = 1,027,573,717,654, *median* = 944,327,660,188, *standard deviation* = 745,279,365,568, *skewness* = 0.50, *minimum* = 581,084,000 and *maximum* = 2,395,102,698,060. Since, this variable like several others had a large value, the researcher decided to use their logarithm value to compute the MLM analysis.

Correspondingly, *AltXMarketcap* which denotes the total market capitalisation of the JSE's AltX had a *mean* of 17,003,739,908, *median* of 18,295,529,156, *standard deviation* of 11,180,437,234, *skewness* of 0.34, *minimum* of 83,012,000 and a *maximum* of 39,918,378,301. This implies that the time series data indicated that the JSE's AltX had a mean market capitalisation figure of about R 17 billion, *maximum* market capitalisation figure of approximately R 40 billion at the peak performance level of the exchange (Aghabozorgi, Shirخورshidi and Wah, 2015). Although, at the least point (i.e. the *minimum* level) the JSE's AltX had a total market capitalisation of about R 83 million during its infant phase. Moreover, this suggests an annual variation of about R 11 billion (i.e. the *standard deviation*), *ceteris paribus*. Likewise, there were on average 3 company delistings from the JSE's AltX annually with a *maximum* of 11 delistment experienced on the lower bourse based on a *mean* value of 3.53, *median* of 3.00, *standard deviation* of 3.36, *skewness* of 0.94, *minimum* value

**Table 6.12 Secondary data hypothesis 1 frequencies statistics**

	N		Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
	Valid	Missing							
JSEAltX	17	0	1,027,573,717,654	944,327,660,188	745,279,365,568	0.50	(0.21)	581,084,000	2,395,102,698,060
AltXMarketcap	17	0	17,003,739,908	18,295,529,156	11,180,437,234	0.34	(0.12)	83,012,000	39,918,378,301
Delistings	17	0	3.53	3.00	3.36	0.94	(0.13)	-	11.00
Ebitda	17	0	652,075	64,883	1,395,592	0.81	(0.42)	(1,440,493)	3,370,394
Employed	17	0	17,758	10,732	22,589	2.92	10.32	149	97,057.54
ForeignAssets	17	0	4,311,868	2,419,720	5,809,637	1.78	2.23	-	18,647,834.66
Goodwill	17	0	1,127,981	930,337	1,079,769	1.08	0.46	2,129	3,593,115
InvestmentsLoans	17	0	2,538,617	1,130,055	2,827,779	1.11	(0.01)	3,439	8,927,276
OperatingProfit/Loss	17	0	(75,237)	671	1,092,636	0.36	0.36	(2,093,365)	2,093,159
TotalEquityLiabilities	17	0	23,713,515	13,299,192	26,037,728	1.15	(0.13)	125,905	77,783,111
Transfers	17	0	2.29	2.00	2.08	0.87	0.28	-	7.00
Turnover	17	0	9,835,976	10,326,639	7,259,207	0.33	(0.47)	168,837	23,753,381
ValueAdded	17	0	1,487,472	526,662	1,582,464	0.68	(0.96)	3,854	4,589,039

*N* = 17, Items in bracket have a negative value, *JSEAltX* is a product of total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies, *AltXMarketcap* Total market capitalisation of the JSE's AltX, *Delistings* Delistings from the JSE's AltX, *Ebitda* Earnings before interest, tax, depreciation and amortisation of the JSE's AltX listed companies, *Employed* Total number of persons employed by the JSE's AltX listed firms, *ForeignAssets* Foreign assets of the JSE's AltX listed companies, *Goodwill* The total goodwill of the JSE's AltX listed firms, *InvestmentsLoans* Investments and loans of the JSE's AltX listed firms, *OperatingProfit/Loss* Operating profit/loss of the JSE's AltX listed firms, *TotalEquityLiabilities* Total equity and liabilities of the JSE's AltX listed companies, *Transfers* Transfers to the JSE Main Board, *Turnover* Turnover or total revenue of the JSE's AltX listed companies, *ValueAdded* Value added of the JSE's AltX listed firms. The variables *Ebitda*, *ForeignAssets*, *Goodwill*, *InvestmentsLoans*, *OperatingProfit/Loss*, *TotalEquityLiabilities*, *Turnover* and *ValueAdded* are expressed in '000.

of nil and a *maximum* figure of 11. Furthermore, earnings before interest, tax, depreciation and amortisation which is known as *Ebitda* is a critical indicator of net income and profitability that is used to gauge the performance of firms and industries (Falconer and Herrington, 2020). It is actually a lay man measurement of a company's income not minding the impact of financing, capital expenditures and amortisation, which is a good indicator of the short-term operational efficiency and/or performance of businesses. Based on the reported frequencies statistics, the average annual *Ebitda* for the JSE's AltX listed companies was about R 652 million with *skewness* of 0.81. However, the *minimum* value for the *Ebitda* was R 1,440,493,000 (i.e. negative), while the *maximum* value was about R 3,370,394,000.

As noted in the literature review chapter, SMEs can be defined by revenue, size and the number of employees a firm hire (Bosma and Kelley, 2019; Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). The average number of employees of all the JSE's AltX listed companies was 17,758 with a *maximum* personnel count of 97,058 per annum. In order to measure the global footprints and the international expansion operations of the JSE's AltX listed firms, it was considered important by the researcher to gather vital statistical information via a proxy of the foreign assets of these firms. The average value of foreign assets was R 4,311,868,000 with *skewness* of 1.78, and a *maximum* spread per annum of R 18,647,835,000. One way to measure the impact of firm listing is the amount of goodwill it brings to a company's balance sheet. Although it is an intangible asset, the brand name and reputation of a company becomes prominent during mergers and acquisitions, because the acquiring firm would be willing to pay a premium which can be adjusted as impairment in the balance sheet without objection. The average goodwill per annum was R 1,127,981,000 with *skewness* of 1.08. Also, its *minimum* value was R 2,129,000, while its *maximum* value was R 3,593,115,000. Similarly, in order to measure how the JSE's AltX listed companies are aggressively expanding their operations, there was a need to peruse the frequencies statistics of the investments and loans of these firms. Unsurprisingly, about R 2,538,617,000 value of investment and loans was made by these firms yearly with *skewness* of about 1.11. Besides, during the worst performing period, this figure nose-dived to a *minimum* of R 3,439,000, before climbing to a peak of R 8,927,276,000.

Unexpectedly, the operating profit/loss made by the JSE's AltX listed firms implied a mean loss value of R 75,237,000 with *skewness* of 0.36, *minimum* loss value of R 2,093,365,000 and *maximum* profit value of R 2,093,159,000. However, the total equity and liabilities of the JSE's AltX listed companies had an annual *mean* value of R 23,713,515,000 with *skewness* of 1.15, *minimum* value of R 125,905,000 and a *maximum* value R 77,783,111,000, which is good. Interestingly, there were about 2 company transfers to the JSE's Main

Board from the JSE's AltX annually with *skewness* of 0.87 and a *maximum* value of 7 promotions annually. Also, the turnover or revenue of these firms from their operating activities was on average about R 9,835,976,000 with *skewness* of 0.33, *minimum* value of R 168,837,000 and a *maximum* value of R 23,753,381,000 per annum. Several studies have pointed the fact that value addition is the sole of firm profitability (Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). So, the researcher considered the *ValueAdded* proxy as a veritable indicator of the ability of listed firms to transform raw materials into either a tangible product or service. The *mean* of *ValueAdded* to the JSE's AltX listed firms was R 1,487,472,000 with *skewness* of 0.68, a *minimum* of R 3,854,000 and a *maximum* value of R 4,589,039,000 per annum.

### 6.7.2 HYPOTHESIS 1 SECONDARY DATA MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.13 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 1 (i.e. impact of firm listing on the JSE's AltX) with *LogJSEAltX* as the dependent variable. Model 1 of Table 6.13 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of firm listing on the JSE's AltX. Since no predictors were included in the model at Level 1, the intercept is equal to the *LogJSEAltX* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of firm listing on the JSE's AltX by 11.637. This can be further illustrated using the test (*t*) statistic, which is presented as *t* (degrees of freedom) = *t* statistic, *p* = *p* value.

This implies that ( $M = 11.637$ ,  $SE = 0.230$ ) the impact of firm listing on the JSE's AltX is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(17) = 50.600$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 did not indicate substantial evidence of within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positive at all levels. However, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Level 2, while the level 3 variance was positive and significant at the 5% levels. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -23.22 with a

deviance statistic of 46.44, while its AIC was 52.44, which makes a lot of sense in the following model analysis.

**Table 6.13 Hypothesis 1 MLM equation for the secondary data**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5A	Model 5B	Model 5C
$\beta_0$	11.637*** (0.230)	3.636* (0.964)	3.579* (0.931)	3.628 (2.189)	6.381** (2.266)	3.576*** (0.937)	4.829*** (0.956)
LogAltXMarketcap		1.040*** (0.066)	1.042*** (0.067)	1.037** (0.141)	0.749** (0.227)	1.042*** (0.069)	0.930*** (0.074)
Delistings		-0.014* (0.004)	-0.013* (0.004)	-0.014 (0.010)	-0.012** (0.003)	-0.013** (0.004)	-0.012*** (0.003)
LogEbitda		-0.006 (0.002)	-0.006* (0.002)	-0.006 (0.006)	-0.005* (0.002)	-0.006** (0.002)	-0.006** (0.002)
LogEmployed		0.438** (0.100)	0.420** (0.089)	0.434 (0.250)	-0.567 (0.740)	0.418** (0.113)	0.318** (0.088)
LogForeignAssets		0.252** (0.038)	0.247** (0.036)	0.251* (0.092)	0.249*** (0.034)	0.252 (0.205)	0.249*** (0.031)
LogGoodwill		-0.300* (0.073)	-0.292** (0.069)	-0.298 (0.146)	-0.364*** (0.084)	-0.291** (0.084)	-0.190* (0.073)
LogInvestmentsLoans		-0.024 (0.067)	-0.019 (0.075)	-0.022 (0.178)	-0.068 (0.081)	-0.018 (0.082)	0.111 (0.084)
LogOperatingProfit/Loss		-0.017** (0.004)	-0.017** (0.004)	-0.017 (0.009)	-0.022*** (0.005)	-0.017*** (0.004)	-0.302* (0.118)
LogTotalEquityLiabilities		0.410* (0.130)	0.405* (0.146)	0.403 (0.299)	0.460** (0.144)	0.405** (0.147)	0.114 (0.174)
LogTurnover		-0.017 (0.007)	-0.016 (0.007)	-0.017 (0.018)	-0.023* (0.008)	-0.016 (0.008)	-0.015* (0.006)
Transfers		-0.786** (0.125)	-0.780** (0.139)	-0.774* (0.284)	-0.691*** (0.148)	-0.782*** (0.170)	-0.686*** (0.126)
LogValueAdded		-0.192* (0.053)	-0.182* (0.047)	-0.190 (0.134)	-0.275** (0.082)	-0.181* (0.080)	-0.125* (0.047)
LogAMc*Employed					0.107 (0.080)		
LogAMc*ForeignAssets						-0.001 (0.021)	
LogAMc*OperatingProfit/Loss							0.028* (0.012)
$\sigma_e^2$	0.043 (14.573)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
$\sigma_v^2$	0.365* (0.181)		0.001 (0.000)	0.000 (0.000)			
$\sigma_u^2$	0.239 (14.574)	0.000** (0.000)	1.94e-22 (0.000)	0.000 (0.000)			
$\sigma_v^2 \times \sigma_u^2$				0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Log-likelihood	-23.22	42.75	38.63	31.22	39.49	38.63	41.14
Deviance	46.44	-85.49	-77.26	-62.43	-78.97	-77.26	-82.28
AIC	52.44	-55.49	-47.26	-6.43	-46.97	-45.26	-50.28
Fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes	Yes	Yes

$N = 17$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX indicators,  $\sigma_u^2$  the level two variance i.e. JSE's AltX companies,  $\sigma_v^2$  the level three variance i.e. SMMEs in South Africa, AIC Akaike's Information Criterion, *LogAMc\*Employed* is the interaction effect between the JSE's AltX Market Cap x the total number of persons employed by the JSE's AltX, *LogAMc\*ForeignAssets* is the interaction effect between the JSE's AltX Market Cap x foreign assets of the JSE's AltX listed firms, *LogAMc\*OperatingProfit/Loss* is the interaction effect between the JSE's AltX Market Cap x operating profit/loss of the JSE's AltX listed firms. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .



Next, Model 2 of Table 6.13 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant ( $\log likelihood = 42.75$ ,  $deviance = -85.49$ ,  $AIC = -55.49$ ,  $p < 0.001$ ). Hence, the results from Hypothesis 1 tests indicated that firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs. This is consistent with findings from similar studies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced  $deviance$  statistic of -85.49 against 96.329 and 46.44 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 3.636 ( $SE = 0.964$ ,  $p < 0.05$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 3.636 in the performance of listed firms on the JSE's AltX. That said, as expected the total market capitalisation of the JSE's AltX had a positive impact on the listed firms on the JSE's AltX, since the coefficient  $\beta_1$  (1.040) of  $LogAltXMarketcap$  was positive and strongly significant ( $SE = 0.066$ ,  $p < 0.001$ ). However, unsurprisingly, the number of delistings on the JSE's AltX ( $Delistings$ ) had a negative and significant effect on registered firms' performance ( $\beta_2 = -0.014$ ,  $SE = 0.004$ ,  $p < 0.05$ ). Obviously, this is due to the fact that such instances of under-performance would make potential investors and SMEs to gravitate towards other lucrative options (Mlonzi et al., 2010; Mzilikazi, 2015; Harvey, 2016; Mehta and Ward, 2017; Pike, Puchert and Chinyamurindi, 2018).

Furthermore, predictably, the number of persons employed by the JSE's AltX listed firms was linked with improved performance, which is in line with the goals of the NDP Agenda 2030. Consequently, any 1-unit increase in the coefficient of  $LogEmployed$  ( $\beta_4$ ) would lead to a 0.438 times positive impact on firm performance for SMEs that are listed on the JSE's AltX ( $SE = 0.100$ ,  $p < 0.01$ ). Also, the rate of growth of foreign expansion overseas as indicated by the  $LogForeignAssets$  variable is associated with improved performance for listed firms on the JSE's AltX ( $\beta_5 = 0.252$ ,  $SE = 0.038$ ,  $p < 0.01$ ). As earlier stated earlier, the  $Goodwill$  proxy variable measures the impact that firm listing brings to the balance sheet based on the brand name and reputation of these companies. Based on the results,  $Goodwill$  was found to be negatively associated with listed firms' performance ( $\beta_6 = -0.300$ ,  $SE = 0.073$ ,  $p < 0.05$ ). Thus, the premium resulting from M&As is normally overpriced and leads to high rate of adjusted impairment over time. Unexpectedly, the operating profit (and loss) was negative and significantly related to the performance of listed firms. This is perhaps due to the fact that between 2007-2014 the cumulative operating loss of all the listed firms on the JSE's AltX was significant, probably

as a result of the consequences and aftermath shocks associated with the stock market crash of 2008. Hence, a 1-unit increase in the coefficient of *LogOperatingProfit/Loss* ( $\beta_8$ ) would lead to a -0.017 times negative impact on firm performance for SMEs that are listed on the JSE's AltX ( $SE = 0.004$ ,  $p < 0.01$ ).

Predictably, total equity and liabilities was positive and significantly related to the performance of listed firms on the JSE's AltX ( $\beta_9 = 0.410$ ,  $SE = 0.130$ ,  $p < 0.05$ ). It therefore implies that share or equity ownership in the lower bourse can be linked with positive abnormal initial returns (Mashaba, 2014). Just like *Delistings*, *Transfers* to the JSE's Main Board (although a good indicator) was negative and significant with the performance of listed firms ( $\beta_{11} = -0.786$ ,  $SE = 0.125$ ,  $p < 0.01$ ). This is because it depletes the exchange of the best companies – who go on to join the big players on the Main Board, which is the essence of establishing the JSE's AltX (i.e. as a nursery for high growth SMEs). Likewise, as earlier stated, value addition is the sole of firm profitability, thus the low level of value added to raw materials also definitely impacted on the operating profit/loss, which is evidently loss – post 2008 financial crises (Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). Therefore, *LogValueAdded* had a coefficient  $\beta_{12}$  (-0.192) which was negative and significant ( $SE = 0.053$ ,  $p < 0.05$ ). More so, unlike the previous models, there was no evidence of within-group variation in Model 2.

Subsequently, in Model 3 of Table 6.13 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were identical to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 1 was fully supported ( $\log likelihood = 38.63$ ,  $deviance = -77.26$ ,  $AIC = -47.26$ ,  $p < 0.001$ ). The coefficient of the intercept  $\beta_0$  (3.579) was positive and significant ( $SE = 0.931$ ,  $p < 0.05$ ), the coefficient of the *LogAltXMarketcap*  $\beta_1$  (1.042) was positive and strongly significant ( $SE = 0.067$ ,  $p < 0.001$ ). While, the coefficient of *Delistings*  $\beta_2$  (-0.013) was negative and significant ( $SE = 0.004$ ,  $p < 0.05$ ). However, unlike the previous model, the coefficient of *LogEbitda*  $\beta_3$  (-0.006) was negative and significant ( $SE = 0.002$ ,  $p < 0.05$ ). Perhaps, the relevance of Ebitda as a critical indicator determining net income and profitability levels in companies became prominent (Falconer and Herrington, 2020). This is in line with the results of the operating profit/loss and turnover. Evidently, demand and price destruction after the 2008 financial crises and during the political crisis in South Africa, as well as due to COVID-19 pandemic lockdowns within and outside South Africa had a negative effect on the performance of listed firms in this critical area. Hence, there is need for more financial prudence and operational efficiency, so as to optimise the costs associated with every aspect of the JSE's AltX listed firms' operations. Similarly, *LogEmployed* was positive and significant ( $\beta_4 = 0.420$ ,  $SE = 0.089$ ,  $p < 0.01$ ).

This is consistent with the findings of prior studies (Moolman, 2004; Mashaba, 2014; Heerden, 2015). Likewise, *LogForeignAssets* was positive and significant ( $\beta_5 = 0.247$ ,  $SE = 0.036$ ,  $p < 0.01$ ), while, *LogGoodwill* was negative and significant ( $\beta_6 = -0.292$ ,  $SE = 0.069$ ,  $p < 0.01$ ) and correspondingly *LogOperatingProfit/Loss* was negative and significant ( $\beta_8 = -0.017$ ,  $SE = 0.004$ ,  $p < 0.01$ ). Also, *LogTotalEquityLiabilities* was positive and significant ( $\beta_9 = 0.405$ ,  $SE = 0.146$ ,  $p < 0.05$ ), while, *Transfers* was negative and significant ( $\beta_{11} = -0.780$ ,  $SE = 0.139$ ,  $p < 0.01$ ) and congruently *LogValueAdded* was negative and significant ( $\beta_{12} = -0.182$ ,  $SE = 0.047$ ,  $p < 0.05$ ). Lastly, there was no evidence of within-group variation in Model 3.

Afterwards, in Model 4 of Table 6.13 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 1's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = 31.22$ ,  $deviance = -62.43$ ,  $AIC = -6.43$ ,  $p < 0.001$ ). However, the goodness of fit *deviance* statistic became less robust than the previous models, since it has a larger test statistic. The ensuing results from Model 4 indicated that the test variable outcomes were similar to that of Model 3. The coefficient of *LogAltXMarketcap*  $\beta_1$  (1.037) was positive and significant ( $SE = 0.141$ ,  $p < 0.01$ ). Equally, the coefficient of *LogForeignAssets*  $\beta_5$  (0.251) was positive and significant ( $SE = 0.092$ ,  $p < 0.05$ ), while the coefficient of *Transfers*  $\beta_{11}$  (-0.774) was negative and significant ( $SE = 0.284$ ,  $p < 0.05$ ). There was however no evidence of within-group variation in Model 4.

In Model 5 of Table 6.13 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented with interaction effects. Model 5A estimates suggests that Hypothesis 1's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 39.49$ ,  $deviance = -78.97$ ,  $AIC = -46.97$ ,  $p < 0.001$ ). In fact, the fit statistics was smaller when compared to the Model 4. Meanwhile, the resultant outcomes from Model 5A showed that the test variable results were comparable to that of Model 2 and 3. The researcher observed that the addition of an interaction variable *LogAMc\*Employed* (which is the interaction effect between the JSE's AltX Market Cap multiplied by the total number of persons employed by the JSE's AltX) made the significance level of the remaining independent variables to become stronger. The coefficient of the intercept  $\beta_0$  (6.381) was positive and significant ( $SE = 2.266$ ,  $p < 0.01$ ), the coefficient of *LogAltXMarketcap*  $\beta_1$  (0.749) was positive and significant ( $SE = 0.227$ ,  $p < 0.01$ ), the coefficient of *Delistings*  $\beta_2$  (-0.012) was negative and significant ( $SE = 0.003$ ,  $p < 0.01$ ). Equally, the coefficient of *LogEbitda*  $\beta_3$  (-0.005) was negative and significant ( $SE = 0.002$ ,  $p < 0.05$ ). Furthermore, the coefficient of *LogForeignAssets*  $\beta_5$  (0.249) was positive and significant ( $SE = 0.034$ ,  $p <$

0.001), the coefficient of *LogGoodwill*  $\beta_6$  (-0.364) was negative and strongly significant ( $SE = 0.084, p < 0.001$ ), the coefficient of *LogOperatingProfit/Loss*  $\beta_8$  (-0.022) was negative and significant ( $SE = 0.005, p < 0.001$ ). Likewise, the coefficient of *LogTotalEquityLiabilities*  $\beta_9$  (0.460) was positive and significant ( $SE = 0.144, p < 0.01$ ). Correspondingly, the coefficient of *LogTurnover*  $\beta_{10}$  (-0.023) was negative and significant ( $SE = 0.008, p < 0.05$ ), the coefficient of *Transfers*  $\beta_{11}$  (-0.691) was negative and strongly significant ( $SE = 0.148, p < 0.001$ ), while the coefficient of *LogValueAdded*  $\beta_{12}$  (-0.275) was negative and significant too ( $SE = 0.082, p < 0.01$ ). Lastly, the above model showed that there was no evidence of within-group variation in Model 5A.

Also, Model 5B's estimates submits that Hypothesis 1's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 38.63, deviance = -77.26, AIC = -45.26, p < 0.001$ ). In fact, the fit statistics was almost equal to that of Model 5A. Meanwhile, the resultant outcomes from Model 5B showed that the test variable results were comparable to that of Model 2, 3 and 5A. The researcher observed that the addition of an interaction variable *LogAMc\*ForeignAssets* (which is the interaction effect between the JSE's AltX Market Cap multiplied by the foreign assets of the JSE's AltX listed firms) made the significance level of the remaining independent variables to become more robust. The coefficient of the intercept  $\beta_0$  (3.576) was positive and significant ( $SE = 0.937, p < 0.001$ ), the coefficient of *LogAltXMarketcap*  $\beta_1$  (1.042) was positive and significant ( $SE = 0.069, p < 0.001$ ), the coefficient of *Delistings*  $\beta_2$  (-0.013) was negative and significant ( $SE = 0.004, p < 0.01$ ). Equally, the coefficient of *LogEbitda*  $\beta_3$  (-0.006) was negative and significant ( $SE = 0.002, p < 0.01$ ). Furthermore, the coefficient of *LogEmployed*  $\beta_4$  (0.418) was positive and significant ( $SE = 0.113, p < 0.01$ ), the coefficient of *LogGoodwill*  $\beta_6$  (-0.291) was negative and strongly significant ( $SE = 0.084, p < 0.01$ ), the coefficient of *LogOperatingProfit/Loss*  $\beta_8$  (-0.017) was negative and significant ( $SE = 0.004, p < 0.001$ ). Likewise, the coefficient of *LogTotalEquityLiabilities*  $\beta_9$  (0.405) was positive and significant ( $SE = 0.147, p < 0.01$ ). Correspondingly, the coefficient of *Transfers*  $\beta_{11}$  (-0.782) was negative and strongly significant ( $SE = 0.170, p < 0.001$ ), while the coefficient of *LogValueAdded*  $\beta_{12}$  (-0.181) was also negative and significant ( $SE = 0.080, p < 0.05$ ). Lastly, the above model showed that there was no evidence of within-group variation in Model 5B.

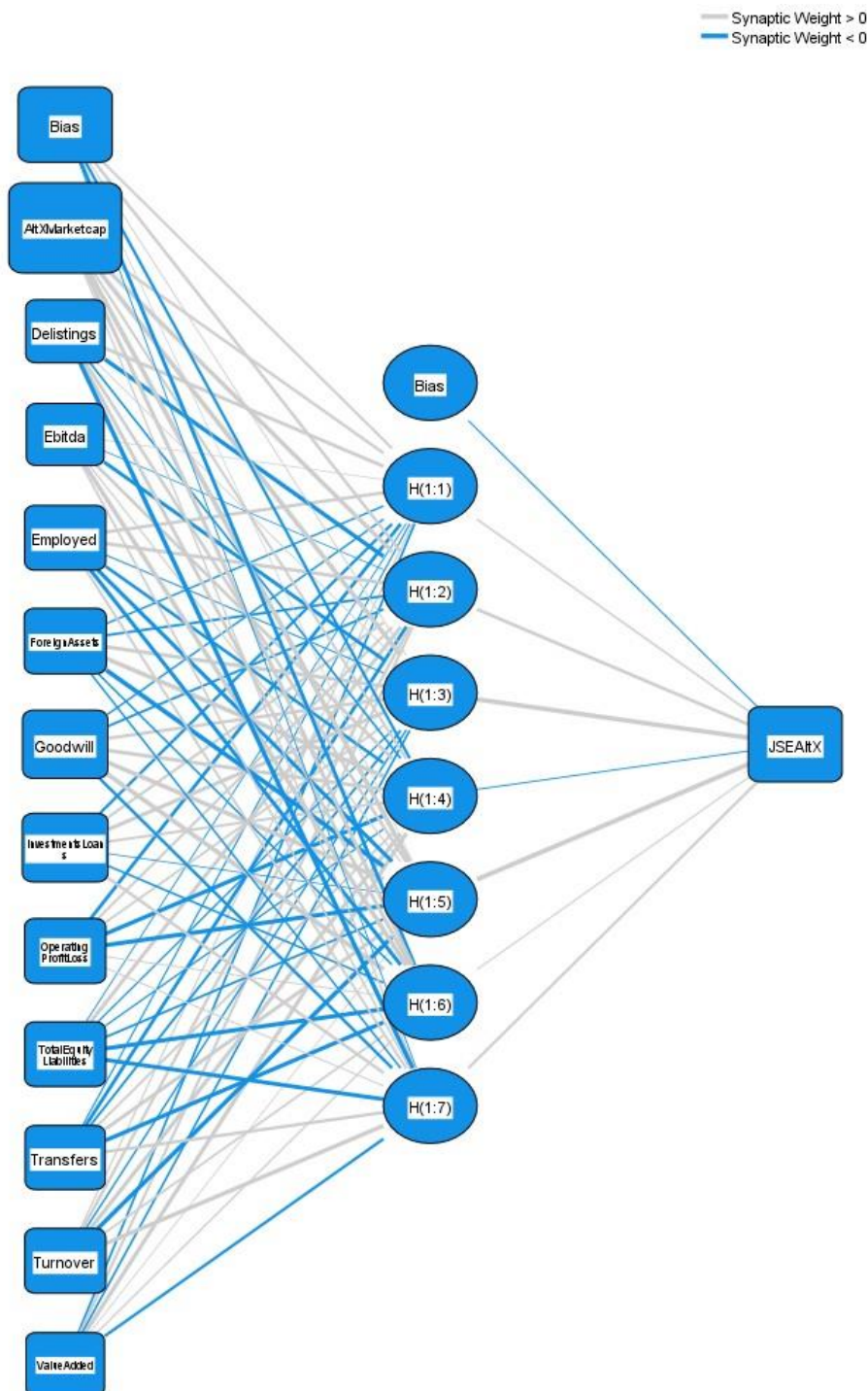
In the same way, Model 5C's estimates reveals that Hypothesis 1's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 41.14, deviance = -82.28, AIC = -50.28, p < 0.001$ ). In fact, the fit statistics was smaller when compared to the Model 5B. Meanwhile, the resultant outcomes from Model 5C showed that the test variable result was comparable to that of Model 2, 3, 5A and 5B. The researcher

observed that the addition of an interaction variable  $LogAMc * OperatingProfit/Loss$  ( $\beta_{15} = 0.028$ ,  $SE = 0.012$ ,  $p < 0.05$ ) which is the interaction effect between the JSE's AltX Market Cap multiplied by the operating profit/loss of the JSE's AltX listed firms made the significance level of the remaining independent variables to become more robust. The coefficient of the intercept  $\beta_0$  (4.829) was positive and significant ( $SE = 0.956$ ,  $p < 0.001$ ), the coefficient of  $LogAltXMarketcap$   $\beta_1$  (0.930) was positive and significant ( $SE = 0.074$ ,  $p < 0.001$ ), the coefficient of  $Delistings$   $\beta_2$  (-0.012) was negative and significant ( $SE = 0.003$ ,  $p < 0.001$ ). Equally, the coefficient of  $LogEbitda$   $\beta_3$  (-0.006) was negative and significant ( $SE = 0.002$ ,  $p < 0.01$ ). Furthermore, the coefficient of  $LogEmployed$   $\beta_4$  (0.318) was positive and significant ( $SE = 0.088$ ,  $p < 0.01$ ), the coefficient of  $LogForeignAssets$   $\beta_5$  (0.249) was positive and significant ( $SE = 0.031$ ,  $p < 0.001$ ), the coefficient of  $LogGoodwill$   $\beta_6$  (-0.190) was negative and significant ( $SE = 0.073$ ,  $p < 0.01$ ), the coefficient of  $LogOperatingProfit/Loss$   $\beta_8$  (-0.302) was negative and significant ( $SE = 0.118$ ,  $p < 0.05$ ). Likewise, the coefficient of  $LogTurnover$   $\beta_{10}$  (-0.015) was negative and significant ( $SE = 0.006$ ,  $p < 0.05$ ). Correspondingly, the coefficient of  $Transfers$   $\beta_{11}$  (-0.686) was negative and strongly significant ( $SE = 0.126$ ,  $p < 0.001$ ), while the coefficient of  $LogValueAdded$   $\beta_{12}$  (-0.125) was also negative and significant ( $SE = 0.047$ ,  $p < 0.05$ ). Lastly, the above model showed that there was no evidence of within-group variation in Model 5C.

Similarly, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit to the preceding model (Leckie, 2013). There was no evidence of significant variation between the number of SMMEs in South Africa, and within- SMMEs in South Africa-between- JSE's AltX companies, as well as within- JSE's AltX companies -between-the JSE's AltX indicators (except in Model 1 and 2). In Model 2, the level 2 variation (i.e. the number of JSE's AltX companies) can lead to about (i.e.  $\sigma_u^2 \times AltXMarketcap[\text{mean}]$  or  $0.000654 * 17,003,739,907.82$ ) R 11,120,446 difference in annual listed firm's performance, ceteris paribus.

### 6.7.3 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 1 SECONDARY DATA

ANNs was used to predict various Hypothesis 1 secondary data iterations. As earlier stated, according to Aryadoust and Baghaei (2016) ANNs are mathematical nonparametric models which is made up of interconnected set of processing units (i.e. neurons) which are adaptive (i.e. capable of pattern recognition) and trainable (i.e. ability to learn patterns) and contain experiential knowledge (i.e. capable of prediction and classification).



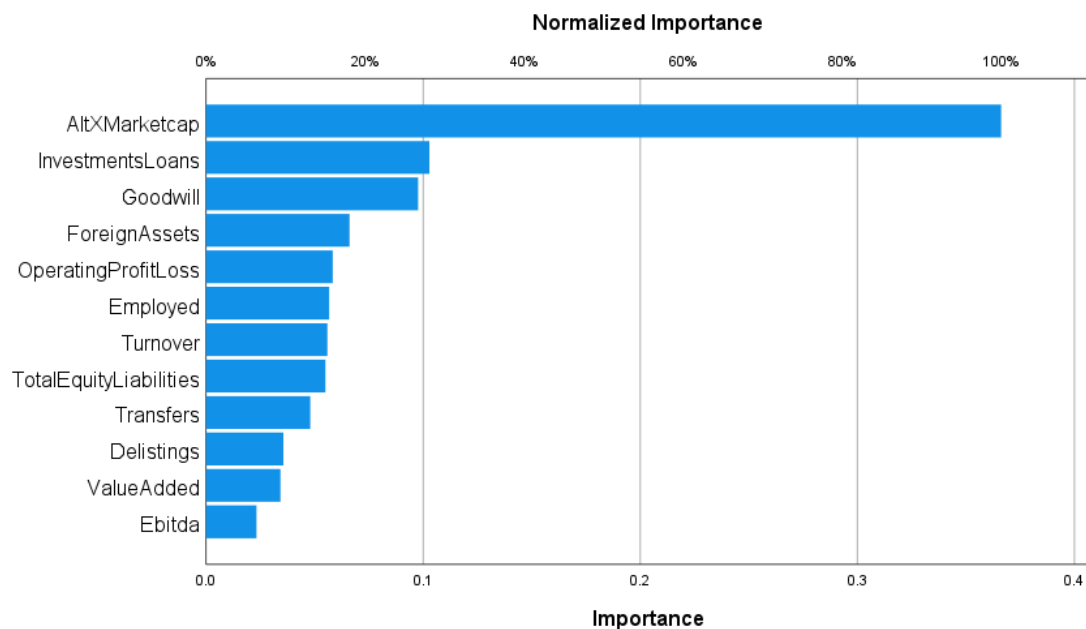
NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.5: Multilayer perceptron network diagram for Hypothesis 1 secondary data (Source: Authors' compilation)**

Additionally, the synaptic strengths or weights in ANNs are analogous to the models' beta coefficients, which indicate the impact of the exogenous explanatory variables on the endogenous measured variables, based on approximated functions. Correspondingly, the bias terms or thresholds of ANNs

are analogous to the intercepts in the application models (Aryadoust and Goh, 2014).

In Figure 6.5 the multilayer perceptron network for Hypothesis 1 secondary data variables has 7 layers, 1 bias term and 1 output (i.e. *JSEAltX*). More so, in the case processing summary, the sample had  $N = 13$  or 77% (with *relative error* 0.050) *Training* parameters and  $N = 4$  or 24 % (with *relative error* 0.001) *Testing* parameters, which comprised on 17 valid datasets. Also, the hidden layer 1 had a *Bias* output layer of -0.083 (i.e. for *JSEAltX*), H(1:1) had an output layer of 0.158 (i.e. for *JSEAltX*), H(1:2) had an output layer of 0.321 (i.e. for *JSEAltX*), H(1:3) had an output layer of 0.718 (i.e. for *JSEAltX*), H(1:4) had an output layer of -0.061 (i.e. for *JSEAltX*), H(1:5) had an output layer of 0.746 (i.e. for *JSEAltX*), H(1:6) had an output layer of 0.083 (i.e. for *JSEAltX*) and H(1:7) had an output layer of 0.253 (i.e. for *JSEAltX*).



**Figure 6.6: Independent variable importance analysis for Hypothesis 1 secondary data (Source: Authors' compilation)**

The rich insights provided by the perceptron ANNs ultimately showed (in Figure 6.6) that the independent variables had a normalised ranked importance of 100% for *AltXMarketcap*, 28% for *InvestmentsLoans*, 27% for *Goodwill*, 18% for *ForeignAssets*, 16% for *OperatingProfit/Loss*, 16% for *Employed*, 15% for *Turnover*, 15% for *TotalEquityLiabilities*, 13% for *Transfers*, 10% for *Delistings*, 9% for *ValueAdded* and 6% for *Ebitda*. This implies that the liquidity of the JSE's AltX is absolutely essential for firm growth, as a source of cheap and interest free capital financing instrument. Also, listed firms must seriously consider the brand name recognition and reputation of their companies, which create a sort of intangible asset that can be cherished at a premium for both investors and

customers. Research evidence reveals that negative news about a company can permanently damage the reputation of such firms, and could lead to poor sales and product boycott (Accéntuate, 2015; AH-Vest, 2019). Thus, gender and race relations should be promoted, so that ugly issues like racial discrimination, pay disparity, rape and sexual harassment does not damage the hard-earned reputation of companies. Likewise, media publicity, promotions and advertisement can be used to raise the corporate profile of these organisations both locally and internationally in order to meet their short-term, medium-term and long-term objectives of listing on the JSE's AltX, *ceteris paribus*. Besides, due to the fact that there are ominous clouds of uncertainty gathering in the country, listed firms need to streamline, restructure or re-capitalise both the equity and operations of their strategic business units (SBUs), so as to leverage their operations in a post-COVID-19 era where price and demand destruction is the order of the day. Similarly, by enhancing their value addition capacity in combination with cost optimisation, debt reschedulement, contract renegotiation, the aggressive use of technology and sound internal controls, the JSE's AltX listed firms can be able to rapidly boost their revenue and profitability potentials, *ceteris paribus*.

#### 6.7.4 SECONDARY DATA HYPOTHESIS 2 FREQUENCIES STATISTICS

As discussed in the previous section, given that one of the purposes of this study deals with the conceptualisation/crystallisation of entrepreneurship theory and processes, so that it can accurately capture and integrate the idea that the JSE's AltX capital market financing contributes significantly to broader industry disruption. The researcher thus intends to answer the research question "What is the relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa?" through the determination of the impact that the JSE's AltX has on the level of entrepreneurship in South Africa. This led to the formulation of Hypothesis 2: The unprecedented performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa. Consequently, various relevant macroeconomic variables were put together in order to ascertain this impact. Table 6.14 shows the frequencies statistics for the JSE AltX secondary data which was used to test hypothesis 2. As indicated in the variable identification section, *JSEAltX* which is the dependent variable is a proxy for the product of the total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies. The resultant frequencies statistics were *mean* = 1,027,573,717,654, *median* = 944,327,660,188, *standard deviation* = 745,279,365,568, *skewness* = 0.50, *minimum* = 581,084,000 and *maximum* = 2,395,102,698,060. Since, this variable like several others had a large value, the researcher decided to use their logarithm value to compute the MLM analysis.



**Table 6.14 Secondary data hypothesis 2 frequencies statistics**

	N		Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
	Valid	Missing							
JSEAltX	17	0	1,027,573,717,654	944,327,660,188	745,279,365,568	0.50	(0.21)	581,084,000	2,395,102,698,060
SMMESouthAfrica	17	0	2,415,313	2,182,823	1,115,421	2.29	6.42	1,144,000	5,979,510
TeaRate	17	0	7.73	7.32	2.26	0.12	(1.32)	4.21	10.96
TotalEquityLiabilities	17	0	23,713,515	13,299,192	26,037,728	1.15	(0.13)	125,905	77,783,111
Turnover	17	0	9,835,976	10,326,639	7,259,207	0.33	(0.47)	168,837	23,753,381
ValueAdded	17	0	1,487,472	526,662	1,582,464	0.68	(0.96)	3,854	4,589,039
AltXMarketcap	17	0	17,003,739,908	18,295,529,156	11,180,437,234	0.34	(0.12)	83,012,000	39,918,378,301
ROA	17	0	(34.86)	(22.17)	43.03	(1.96)	4.59	(165.29)	10.13
QuickRatio	17	0	7.00	4.02	7.65	1.98	3.84	1.60	29.21
PatentsTrademarks	17	0	120,825	25,470	212,892	1.99	2.58	530	632,198
InvestmentsLoans	17	0	2,538,617	1,130,055	2,827,779	1.11	(0.01)	3,439	8,927,276
ForeignAssets	17	0	4,311,868	2,419,720	5,809,637	1.78	2.23	-	18,647,835
EarningsYield	17	0	(6.21)	(6.13)	15.71	(0.12)	0.01	(38.79)	20.48
CurrentRatio	17	0	7.24	4.29	7.63	1.99	3.88	1.86	29.44

*N* = 17, Items in bracket have a negative value, *JSEAltX* is a product of total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies, *SMMESouthAfrica* Total number of SMMEs in South Africa, *TeaRate* Total entrepreneurial activity rate of South Africa, *TotalEquityLiabilities* Total equity and liabilities of the JSE's AltX, *Turnover* Turnover or total revenue of the JSE's AltX, *ValueAdded* Value added of the JSE's AltX, *AltXMarketcap* Total market capitalisation of the JSE's AltX, *ROA* Return on assets, *QuickRatio* Quick ratio of the JSE's AltX, *PatentsTrademarks* Patents and trademarks of the JSE's AltX, *InvestmentsLoans* Investments and loans of the JSE's AltX, *ForeignAssets* Foreign assets of the JSE's AltX, *EarningsYield* Earnings yield of the JSE's AltX, *CurrentRatio* Current ratio of the JSE's AltX. The variables *TotalEquityLiabilities*, *Turnover*, *ValueAdded*, *PatentsTrademarks*, *InvestmentsLoans* and *ForeignAssets* are expressed in '000.

Correspondingly, *SMMEsSouthAfrica* which represents the total number of SMMEs in South Africa had a *mean* of 2,415,313, *median* of 2,182,823, *standard deviation* of 1,115,421, *skewness* of 2.29, *minimum* of 1,144,000 and a *maximum* of 5,979,510. Contemporary entrepreneurship literatures have enumerated the significance that the SME sector plays in trade facilitation, especially as an essential ingredient for economic growth and transformation worldwide (Smulders, 2006; Fin24, 2015ab; DSBD, 2016). Hence, South Africa's growth can be tied to this sector of the economy, this is why the JSE's AltX intervention in this sector is projected to yield economic gains within a medium to long term period. One noticeable fact is that in South Africa the rate of growth of SMEs is also cut short by business closures which explains the peak of 5,979,510 enterprises operating in South Africa, as against 1,144,000 firms being in operation during a period of recession. Likewise, the total entrepreneurial activity rate, which is known as the Tea Rate of South Africa has a *mean* value of 7.73. This figure is low when compared with other African countries Tea Rate, at its *minimum* point this measure of both necessity and opportunity driven entrepreneurship declines to about 4.21 before reaching the summit of 10.96 (Bowmaker-Falconer and Herrington, 2020). Consequently, this trend necessitated the researcher to probe the impact of firm listing on the level of entrepreneurship in South Africa.

In addition, ROA (which stands for return on assets) is the percentage value reflecting the ability of a firm's asset to generate revenue and profitability. Based on the *mean* value of -34.86% across all sectors, *minimum* of -165.29% and *maximum* of 10.13%, the capital intensity of the JSE's AltX listed can be viewed to be generally low return, probably because of the large initial investments undertaken by most of these companies, which warrants further investigation (Crosson, Needles, Needles and Powers, 2008; CFI, 2021). Similarly, the quick ratio (otherwise known as the acid-test ratio) measures a firm's ability to settle short-term liabilities with its near cash or quick assets. A sneak review shows that the JSE's AltX listed companies have a very good quick ratio with *mean* of 7.00, *skewness* of 1.98, *minimum* of 1.60 and a *maximum* value of 29.21 – which is relatively high. It has been well established in entrepreneurship literature that innovation is a core driver of business progress and economic growth. The valuation of patents and trademarks of the JSE's AltX listed companies indicates that on average there are about R 120,825,000 worth of patents and trademarks in the lower bourse with *skewness* of 1.99, *minimum* of R 530,000 and a *maximum* valuation of about R 632,198,000. Although, these values are quite impressive, there is room for more of them, in order to boost the entrepreneurial ecosystem in South Africa.

Likewise, earnings yield which is the reciprocal of the price/earnings ratio expressed in percentage can be used to measure the performance of the JSE's

AltX listed companies with stocks, long-term interest rates and bond rates in the last 12 months. This also determines the amount of dividend to be paid to shareholders (i.e. the rate of return) or the threshold for retained earnings to be employed by these companies. Correspondingly, the *EarningsYield* of the JSE's AltX had a *mean* of -6.21%, *median* of -6.13%, *standard deviation* of 15.71, *skewness* of -0.12, *minimum* of -38.79% and a *maximum* of 20.48%. This shows that the JSE's AltX is currently experiencing a rebound after the shocks of the 2008 financial crises exposed most of these firms to some liquidity problems and/or even bankruptcy (Mlonzi et al., 2010; Harvey, 2016; CFI, 2021). The *CurrentRatio* proxy just like the acid-test ratio measures a listed firm's ability to settle short-term liabilities with its current assets. Expectedly, its *mean* of 7.24, *median* of 4.29, *standard deviation* of 7.63, *skewness* of 1.99, *minimum* of 1.86 and *maximum* of 29.44 indicates that the JSE's AltX listed companies can meet its short-term liabilities. However, caution needs to be exercised, because it is not a good measure of liquidity when those assets cannot be easily disposed or converted to cash when needed (Crosson et al., 2008; CFI, 2021). The researcher was able to distinguish between several financial ratios in order to gain substantial information about a company. But there is need to critically review these results based on liquidity, leverage, efficiency, profitability and market value ratios, so as to effectively track and compare company performance for both internal and external uses. Lastly, frequencies statistics for the following econometric variables *TotalEquityLiabilities*, *Turnover*, *ValueAdded*, *AltXMarketcap*, *InvestmentsLoans* and *ForeignAssets* was not discussed in this section because the datasets are the same with the data for hypothesis 1. Thus, the ensuing MLM equation will therefore ascertain if there exist within and between relationships between these variables.

### 6.7.5 HYPOTHESIS 2 SECONDARY DATA MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM<sup>14</sup> equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.15 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 2 (i.e. impact of firm listing on the level of entrepreneurship in South Africa) with

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<sup>14</sup> For Hypothesis 2 MLM equation, the Level 3 variable is *NoofJSEsAltXcompanies*, while the Level 2 variable becomes *BBEEScorecomposite*, since the previous level 3 variable (i.e. the number of SMMEs in South Africa) is an independent variable that was used to measure the JSE's AltX listed firms impact on the level of entrepreneurship in South Africa.

**Table 6.15 Hypothesis 2 MLM equation for the secondary data**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5A	Model 5B	Model 5C
$\beta_0$	11.637*** (0.230)	-8.085*** (2.463)	-3.973 (2.369)	-3.973 (2.369)	-2.530 (2.458)	5.061 (3.719)	-3.204 (2.326)
LogSMMESouthAfrica		0.151 (0.135)	0.143 (0.145)	0.143 (0.145)			
LogTeaRate		-2.596*** (0.454)	-1.065* (0.502)	-1.065* (0.502)		-2.223* (0.923)	-1.071 (0.521)
LogTotalEquityLiabilities		-2.363*** (0.391)	-0.857 (0.516)	-0.857 (0.516)	-0.782 (0.573)	-2.845** (0.838)	-1.013 (0.518)
LogTurnover		3.627*** (0.654)	1.304 (0.680)	1.304 (0.680)	1.129 (0.756)	2.304 (1.299)	1.497* (0.686)
LogValueAdded		-0.191** (0.069)	-0.071 (0.070)	-0.071 (0.070)	-0.077 (0.078)	-0.217 (0.130)	-0.080 (0.072)
LogAltXMarketcap		0.929*** (0.098)	1.136*** (0.144)	1.136*** (0.144)	1.131*** (0.159)		1.104*** (0.147)
LogROA		-0.139*** (0.028)	-0.042 (0.034)	-0.042 (0.034)	-0.022 (0.036)	-0.126 (0.062)	-0.041 (0.035)
LogQuickRatio		0.195 (0.089)	-0.925 (2.453)	-0.925 (2.453)	-0.412 (2.694)	4.077 (4.586)	0.048 (2.414)
LogPatentsTrademarks		-0.054 (0.041)	-0.028 (0.052)	-0.028 (0.052)	-0.054 (0.056)	-0.018 (0.102)	
LogInvestmentsLoans		0.992*** (0.216)	0.327 (0.292)	0.327 (0.292)	0.299 (0.323)	1.677*** (0.424)	0.397 (0.297)
LogForeignAssets		-0.179* (0.084)	-0.007 (0.078)	-0.007 (0.078)	0.022 (0.085)	0.170 (0.144)	-0.012 (0.081)
LogEarningsYield		0.286*** (0.079)	0.097 (0.073)	0.097 (0.073)	0.090 (0.081)	0.098 (0.144)	0.117 (0.074)
LogCurrentRatio		-0.690*** (0.000)	0.994 (2.537)	0.994 (2.537)	0.492 (2.787)	-4.086 (4.751)	0.016 (2.505)
LogSMMESouthAfrica*TeaRate					-0.104 (0.081)		
LogSMMESouthAfrica*AltXMarketcap						0.052 (0.026)	
LogSMMESouthAfrica*PatentsTrademarks							-0.006 (0.009)
$\sigma_e^2$	0.041 (2.340)	0.000 (0.000)	0.002 (0.001)	0.002 (0.001)	0.002 (0.002)	0.008 (0.005)	0.004* (0.002)
$\sigma_v^2$	0.885** (0.334)		0.004 (0.000)	0.004 (0.000)			
$\sigma_u^2$	0.003 (2.339)	0.005*** (0.000)	5.86e-33 (0.000)	5.86e-33 (0.000)			
$\sigma_v^2 \times \sigma_u^2$				0.002 (0.000)	0.003 (0.000)	0.008 (0.000)	0.000 (0.000)
Log-likelihood	-23.22	62.94	22.57	22.57	20.92	11.20	21.92
Deviance	46.44	-125.88	-45.13	-45.13	-41.85	-22.40	-43.84
AIC	52.44	-93.88	-13.13	-13.13	-11.85	7.60	-13.84
Fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes	Yes	Yes

$N = 17$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX indicators,  $\sigma_u^2$  the level two variance i.e. B-BBEE composite score of the JSE's AltX listed companies,  $\sigma_v^2$  the level three variance i.e. JSE's AltX listed companies, AIC Akaike's Information Criterion,  $LogSMMESouthAfrica*TeaRate$  is the interaction effect between the SMMES in South Africa x the TEA rate of the JSE's AltX listed companies,  $LogSMMESouthAfrica*AltXMarketcap$  is the interaction effect between the SMMES in South Africa x the JSE's AltX Market Cap,  $LogSMMESouthAfrica*PatentsTrademarks$  is the interaction effect between the SMMES in South Africa x the number of Patents and Trademarks of AltX listed firms. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

*LogJSEAltX* as the dependent variable. Model 1 of Table 6.15 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of firm listing on the level of entrepreneurship in South Africa. Since no predictors were included in the model at Level 1, the intercept is equal to the *LogJSEAltX* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of firm listing on the level of entrepreneurship in South Africa by 11.637. This can be further illustrated using the test (*t*) statistic, which is presented as *t* (degrees of freedom) = *t* statistic, *p* = *p* value. This implies that ( $M = 11.637$ ,  $SE = 0.230$ ) the impact of firm listing on the level of entrepreneurship in South Africa is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(17) = 50.600$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 did not show substantial evidence of within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positive at all levels. However, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Level 2, while the level 3 variance was significant at 1% levels. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -23.22 with a *deviance* statistic of 46.44, while its *AIC* was 52.44, which makes a lot of sense in the following model analysis.

Next, Model 2 of Table 6.15 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = 62.94, *deviance* = -125.88, *AIC* = -93.88,  $p < 0.001$ ). Hence, the results from Hypothesis 2 tests indicated that the unprecedented performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa. This is consistent with findings from similar studies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of -125.88 against 96.329 and 46.44 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of -8.085 ( $SE 2.463$ ,  $p < 0.001$ ). This means the coefficient of the equation has a negative direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted decrease of -8.085 on the JSE's AltX listed firm's performance impact on the level of entrepreneurship in South Africa. However, the number of SMMEs in South

Africa had a positive, but not significant effect on the dependent variable. That said, the TEA rate of South Africa had a negative impact on the explained variable, since the coefficient  $\beta_2$  (-2.596) of *LogTeaRate* was negative and strongly significant ( $SE = 0.454$ ,  $p < 0.001$ ). Also, the total equity and liabilities of the JSE's AltX listed companies (*LogTotalEquityLiabilities*) had a negative and significant effect on the level of entrepreneurship in South Africa ( $\beta_3 = -2.363$ ,  $SE = 0.391$ ,  $p < 0.001$ ). This implies that a huge liability portfolio can be adversely linked with firm underperformance, which correspondingly negatively impacts on the level of entrepreneurship in South Africa too.

Furthermore, predictably, the turnover or total revenue of the JSE's AltX listed firms was linked with a positive impact on the level of entrepreneurship in South Africa. Consequently, any 1-unit increase in the coefficient of *LogTurnover* ( $\beta_4$ ) would lead to a 3.627 times positive impact on the JSE's AltX listed firm's performance and on the level of entrepreneurship in South Africa ( $SE = 0.654$ ,  $p < 0.001$ ). Also, the value added by firms that are registered on the lower bourse as indicated by the *LogValueAdded* variable is associated with a negative impact on the level of entrepreneurship in South Africa ( $\beta_5 = -0.191$ ,  $SE = 0.069$ ,  $p < 0.01$ ). This implies that there is need to improve on the value addition capacity of these firms using state-of-the-art technology. In addition, the *LogAltXMarketcap* proxy variable indicates that the JSE's AltX market capitalisation is positively linked with the level of entrepreneurship in South Africa ( $\beta_6 = 0.929$ ,  $SE = 0.098$ ,  $p < 0.001$ ). Similarly, a 1-unit increase in the coefficient of *LogROA* ( $\beta_7$ ) (which is a proxy representing the return on assets of the JSE's AltX listed firms) would lead to a -0.139 times negative impact on the JSE's AltX firm performance and on the level of entrepreneurship in South Africa ( $SE = 0.028$ ,  $p < 0.001$ ).

In the same vein, the *LogInvestmentsLoans* proxy econometric variable point to the fact that the investments and loans obtained by the JSE's AltX listed firms is positively linked with the level of entrepreneurship in South Africa ( $\beta_{10} = 0.992$ ,  $SE = 0.216$ ,  $p < 0.001$ ). Expectedly, the acquisition of more foreign assets (i.e. *LogForeignAssets*) was inversely related to the level of entrepreneurship in South Africa ( $\beta_{11} = -0.179$ ,  $SE = 0.084$ ,  $p < 0.05$ ). Just as, the earnings yield disclosed that the growth prospects of the JSE's AltX listed firms had a positive and strongly significant relationship with the level of entrepreneurship in South Africa ( $\beta_{12} = 0.286$ ,  $SE = 0.079$ ,  $p < 0.001$ ). While, the current ratio econometric variable (i.e. *LogCurrentRatio*) was negatively related to the dependent variable in Model 1 ( $\beta_{13} = -0.690$ ,  $SE = 0.000$ ,  $p < 0.001$ ). More so, unlike the previous models, there was no evidence of within-group variation in Model 2. There was however, evidence of between group variation in Level 2 (i.e. *BBBEEscorecomposite*), given its coefficient  $\beta_{14}$  of 0.005,  $SE$  of 0.000 and  $p$ -value of 0.001.

Subsequently, in Model 3 of Table 6.15 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were similar to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 2 was fully supported ( $\log likelihood = 22.57$ ,  $deviance = -45.13$ ,  $AIC = -13.13$ ,  $p < 0.001$ ). The coefficient of  $LogTeaRate$   $\beta_2$  (-1.065) was negative and significant ( $SE = 0.502$ ,  $p < 0.05$ ), however, the coefficient of the  $LogAltXMarketcap$  macroeconomic variable  $\beta_6$  (1.136) was positive and strongly significant ( $SE = 0.144$ ,  $p < 0.001$ ). As a matter of fact, in Model 3, when both the Level 3 variable (i.e. NoofJSEsAltXcompanies) and the Level 2 variable (i.e. BBBEEScorecomposite) are introduced in the MLM equation, most of the independent variables which were significant in Model 2 lost their level of importance thereafter. Moreover, there was no evidence of within and between-group relationships in the model. Afterwards, in Model 4 of Table 6.15 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 2's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = 22.57$ ,  $deviance = -45.13$ ,  $AIC = -13.13$ ,  $p < 0.001$ ). Amazingly, the goodness of fit  $deviance$  statistic remained the same with the Model 3 test statistic. The ensuing results from Model 4 indicated that the test variable outcomes were identical to that of Model 3. The coefficient of  $LogTeaRate$   $\beta_2$  (-1.065) was negative and significant ( $SE = 0.502$ ,  $p < 0.05$ ). Equally, the coefficient of  $LogAltXMarketcap$   $\beta_6$  (1.136) was positive and significant ( $SE = 0.144$ ,  $p < 0.001$ ). There was also no evidence of within and between-group clustering in Model 4.

In Model 5 of Table 6.15 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented with interaction effects. Model 5A estimates suggests that Hypothesis 2's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 20.92$ ,  $deviance = -41.85$ ,  $AIC = -11.85$ ,  $p < 0.001$ ). However, the fit statistics was a little bit larger than that of Model 4. Similarly, the resultant outcomes from Model 5A showed that the test variable results were comparable to that of Model 4. The researcher observed that the addition of an interaction variable  $LogSMMEsSouthAfrica*TeaRate$  (which is the interaction effect between the number of SMMEs in South Africa multiplied by the total entrepreneurial activity rate of South Africa) made the significance level of the remaining independent variables to become weaker. This implies that the low TEA rate of South Africa impacts negatively on the business ownership rate in South Africa. Consequently, only the coefficient of  $LogAltXMarketcap$   $\beta_6$  (1.131) was positive and significant ( $SE = 0.159$ ,  $p < 0.001$ ). Lastly, the above model showed that there was no evidence of within and between-group variation in Model 5A.

Also, Model 5B's estimates submits that Hypothesis 2's positive and strongly significant relationship with the outcome variable was further strengthened (*log likelihood* = 11.20, *deviance* = -22.40, *AIC* = 7.60,  $p < 0.001$ ). But the fit statistics was less than that of Models 2, 3, 4 and 5A. Meanwhile, the resultant outcomes from Model 5B showed that the test variable results were comparable to that of Model 2, 3, 4 and 5A. The researcher observed that the addition of an interaction variable *LogSMMESouthAfrica\*AltXMarketcap* (which is the interaction effect between the number of SMMEs in South Africa multiplied by the JSE's AltX listed firm's market capitalisation) made the significance level of the remaining independent variables to become more robust. The coefficient of *LogTeaRate*  $\beta_2$  (-2.223) was negative and significant ( $SE = 0.923$ ,  $p < 0.05$ ), the coefficient of *LogTotalEquityLiabilities*  $\beta_3$  (-2.845) was negative and significant ( $SE = 0.838$ ,  $p < 0.01$ ). While, the coefficient of *LogInvestmentsLoans*  $\beta_{10}$  (1.677) was positive and strongly significant ( $SE = 0.424$ ,  $p < 0.01$ ). Furthermore, the above model showed that there was no evidence of within and between-group variation in Model 5B.

In the same way, Model 5C's estimates reveals that Hypothesis 2's positive and strongly significant relationship with the outcome variable was further strengthened (*log likelihood* = 21.92, *deviance* = -43.84, *AIC* = -13.84,  $p < 0.001$ ). In fact, the fit statistics was smaller when compared to Model 1, 5A and 5B. Meanwhile, the resultant outcomes from Model 5C showed that the test variable result was comparable to that of Model 2, 3, 4, 5A and 5B. The researcher observed that the addition of an interaction variable *LogSMMESouthAfrica\*PatentsTrademarks* which is the interaction effect between the number of SMMEs in South Africa multiplied by the value of the patents and trademarks of the JSE's AltX listed firms made the significance level of the remaining independent variables to become more robust. The coefficient of *LogTurnover*  $\beta_4$  (1.497) was positive and significant ( $SE = 0.686$ ,  $p < 0.05$ ). Equally, the coefficient of *LogAltXMarketcap*  $\beta_6$  (1.104) was also positive and strongly significant ( $SE = 0.147$ ,  $p < 0.001$ ). Furthermore, the above model showed that there was evidence of within-group variation ( $SE = 0.002$ ,  $p < 0.01$ ) in Model 5C.

Similarly, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit than the null model (Leckie, 2013). There was no evidence of significant variation between the number of JSE's AltX companies, and within- JSE's AltX companies-between- the B-BBEE composite score, as well as within- the B-BBEE composite score -between-the JSE's AltX indicators (except in Model 1, 2 and 5C). In Model 1, the level 3 variation (i.e. the number of JSE's AltX companies) can lead to approximately R 15,045,080,808 difference in annual listed firm's performance effect on the



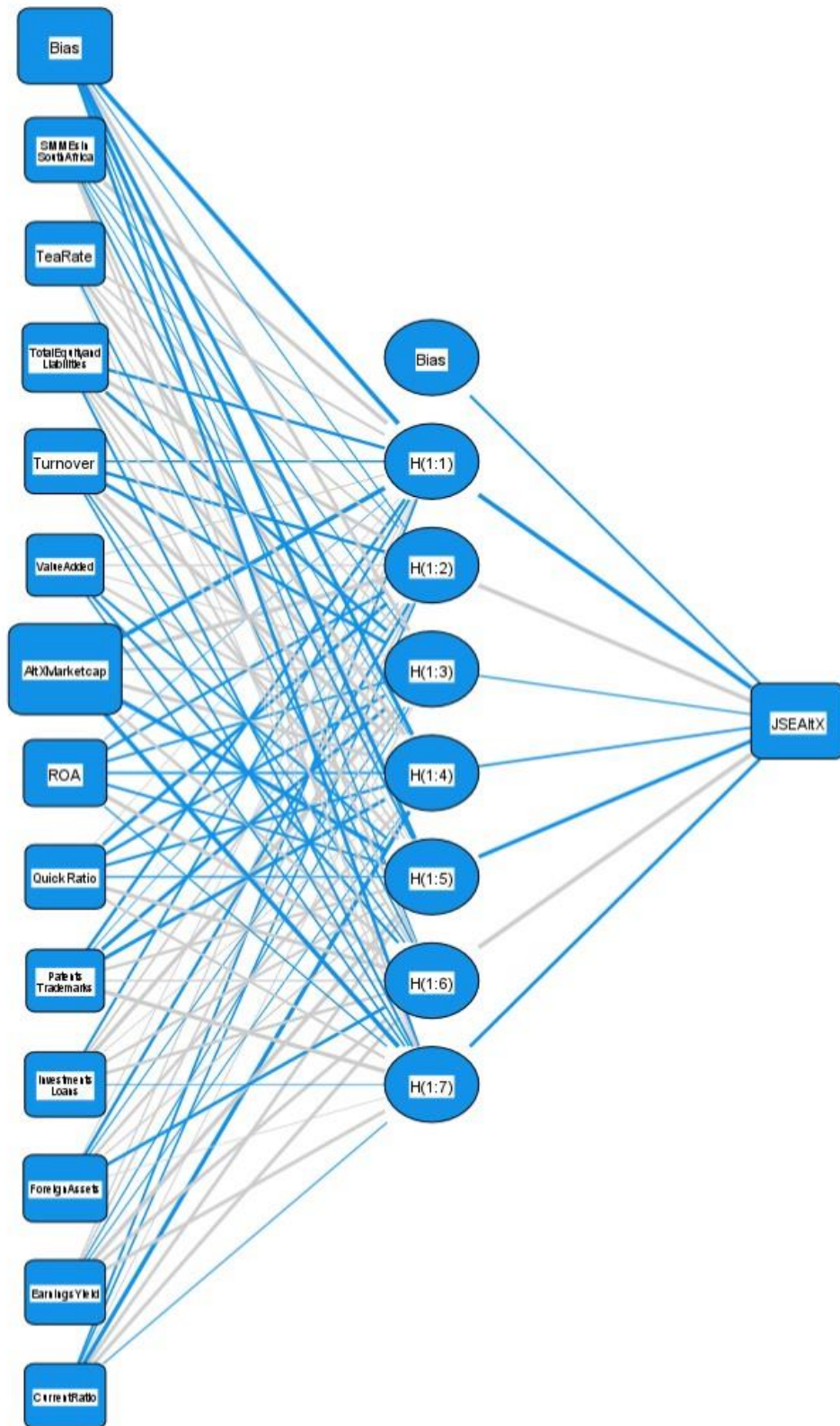
level of entrepreneurship in South Africa, *ceteris paribus* (i.e.  $\sigma_v^2 \times AltXMarketcap[\text{mean}]$  or  $0.884810 * 17,003,739,907.82$ ). But this has a margin of error of about 0.334. In Model 2, the level 2 variation (i.e. the B-BBEE composite score) can lead to about R 86,055,928 (i.e.  $\sigma_u^2 \times AltXMarketcap[\text{mean}]$  or  $0.005061 * 17,003,739,907.82$ ) difference in annual listed firm's performance effect on the level of entrepreneurship in South Africa, *ceteris paribus*. This outcome is supported by a very low margin of error of about 0.000. In Model 5C, the level 2 variation (i.e. the the B-BBEE composite score) can lead to about R 73,728,216 difference in annual listed firm's performance effect on the level of entrepreneurship in South Africa, *ceteris paribus*. Nevertheless, this value has a with a margin of error of about 0.002 (i.e.  $\sigma_u^2 \times AltXMarketcap[\text{mean}]$  or  $0.004336 * 17,003,739,907.82$ ).

### 6.7.6 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 2 SECONDARY DATA

ANNs was used to predict various Hypothesis 2 secondary data iterations. In Figure 6.7 the multilayer perceptron network for Hypothesis 2 secondary data variables has 7 layers, 1 bias term and 1 output (i.e. *JSEAltX*). More so, in the case processing summary, the sample had  $N = 13$  or 77% (with *relative error* 0.016) *Training* parameters and  $N = 4$  or 24 % (with *relative error* 0.011) *Testing* parameters, which comprised on 17 valid datasets. Also, the hidden layer 1 had a *Bias JSEAltX* predicted output layer of -0.239, H(1:1) had a *JSEAltX* predicted output layer of -0.554, H(1:2) had a *JSEAltX* predicted output layer of 0.493, H(1:3) had a *JSEAltX* predicted output layer of -0.091, H(1:4) had a *JSEAltX* predicted output layer of -0.188, H(1:5) had a *JSEAltX* predicted output layer of -0.407, H(1:6) had a *JSEAltX* predicted output layer of 0.562 and H(1:7) had a *JSEAltX* predicted output layer of -0.333.

Globally, the role the SME sector plays in economic growth and development has been adjudged to be positive. According to the DSBD (2016) the on-going departmental intervention in the small business sector is expected to generate about five million jobs within a 5-year period. It has been observed that South Africa's SMEs representing 98 per cent of small businesses across the country, employs approximately 47 per cent of the total workforce and contributes to 42 per cent of the GDP (Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). According to Fin24 (2015a) in order to meet the NDP's target of creating 11 million jobs by 2030, South Africa needs about 49,000 SMEs growing at a rate of 20 per cent per annum.

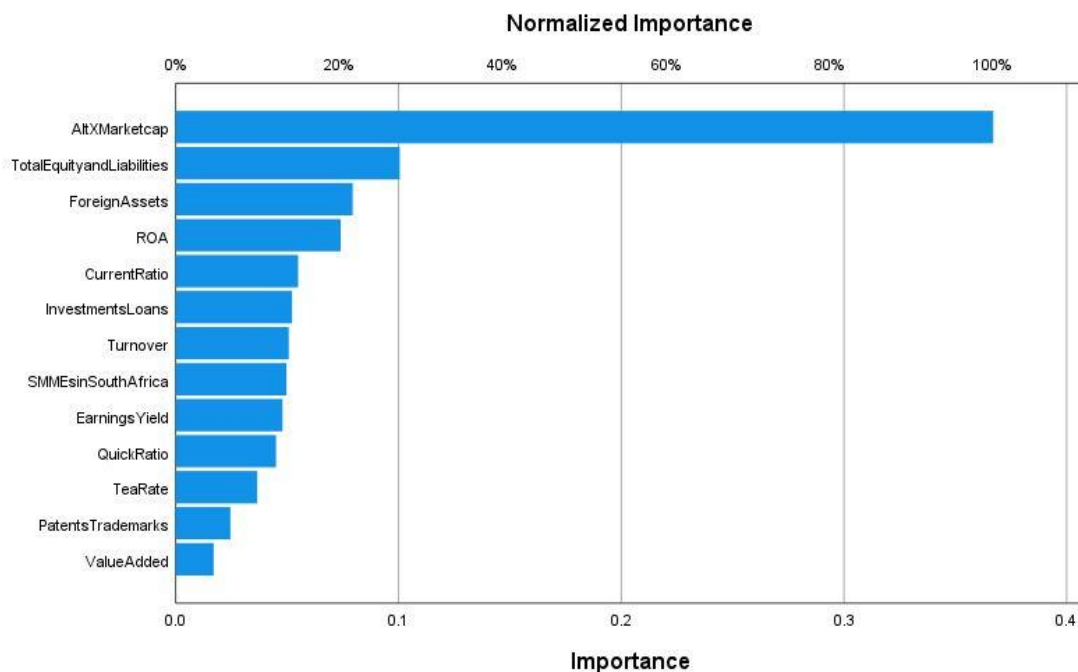
— Synaptic Weight > 0  
 — Synaptic Weight < 0



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.7: Multilayer perceptron network diagram for Hypothesis 2 secondary data (Source: Authors' compilation)**

Although, given the current scenario, this target is not achievable, there is hope. As a matter of fact, Smulders (2006) find that SMMEs in South Africa employ about 80 per cent of the total work force. This means that the addition of ‘micro’ to the SME definition in South Africa (DSBD, 2020b) would translate to the SMME sector employing about 10.8 million persons in South Africa, which accounts for approximately 66% of all jobs in the country. This prodigious news has led to a surge in this area of research.



**Figure 6.8: Independent variable importance analysis for Hypothesis 2 secondary data (Source: Authors’ compilation)**

The rich insights provided by the perceptron ANNs ultimately showed (in Figure 6.8) that the independent variables had a normalised ranked importance of 100% for *AltXMarketcap*, 27% for *TotalEquityLiabilities*, 22% for *ForeignAssets*, 20% for *ROA*, 15% for *CurrentRatio*, 14% for *InvestmentsLoans*, 14% for *Turnover*, 14% for *SMMEsinSouthAfrica*, 13% for *EarningsYield*, 12% for *QuickRatio*, 10% for *TeaRate*, 7% for *PatentsTrademarks* and 5% for *ValueAdded*. This implies that the liquidity of the JSE’s AltX is absolutely essential for listed firm’s growth (Bosma and Kelley, 2019), especially as it boosts investor confidence. Similarly, the equity and liability portfolio of these listed companies need to be aptly set, so as not to lead to ownership transfers and huge indebtedness. Besides, in order to hasten the rate of firm expansion, foreign assets should be acquired (i.e. when necessary) if it increases the value adding capacity of these companies over time. Equally, efforts should be made to gear up the ROA of these listed firms (Crosson et al., 2008; CFI, 2021), so that they can be high enough to trigger massive investments, revenue and profit generation over a short-term, medium-term and long-term period of time, *ceteris paribus*.

### 6.7.7 SECONDARY DATA HYPOTHESIS 3 FREQUENCIES STATISTICS

As discussed in the previous section, given that one of the purposes of this study is the quantitative identification and description of the JSE's AltX listed firms using theory-based empirical research. The researcher intends to answer the research question "How does increased share capital levels influence the expansion and performance of listed firms on the AltX?" through the determination of the impact that the JSE's AltX has on listed firm's performance. It is therefore necessary to quantitatively establish whether there is a link between increased capitalisation of the JSE's AltX and the expansionary drive of listed firms. This led to the formulation of Hypothesis 3: The rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion. Consequently, relevant macroeconomic variables were put together in order to ascertain this impact. Table 6.16 shows the frequencies statistics for the JSE AltX secondary data which was used to test hypothesis 3. As indicated in the variable identification section, *JSEAltX* which is the dependent variable is a proxy for the product of the total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies. The resultant frequencies statistics were *mean* = 1,027,573,717,654, *median* = 944,327,660,188, *standard deviation* = 745,279,365,568, *skewness* = 0.50, *minimum* = 581,084,000 and *maximum* = 2,395,102,698,060. Since, this variable like several others had a large value, the researcher decided to use their logarithm value to compute the MLM analysis.

Correspondingly, *AltXMarketcap* which denotes the total market capitalisation of the JSE's AltX had a *mean* of 17,003,739,908, *median* of 18,295,529,156, *standard deviation* of 11,180,437,234, *skewness* of 0.34, *minimum* of 83,012,000 and a *maximum* of 39,918,378,301. This implies that the time series data indicated that the JSE's AltX had a mean market capitalisation figure of about R 17 billion, *maximum* market capitalisation figure of approximately R 40 billion at the peak performance level of the exchange (Aghabozorgi, Shirchorshidi and Wah, 2015). Although, at the least point (i.e. the *minimum* level) the JSE's AltX had a total market capitalisation of about R 83 million during its infant phase. Moreover, this suggests an annual variation of about R 11 billion (i.e. the *standard deviation*), *ceteris paribus*. Likewise, the total cash from investment activities of the JSE's AltX listed companies had a *mean* loss value of R 2,304,743,000, *skewness* of 0.34, *minimum* loss value of R 10,943,658,000 with *maximum* profitability of R 3,245,140,000. This informs the researchers' attempt to thoroughly review data in order to accurately measure the impact of increased capitalisation of the JSE's AltX on the expansionary drive of listed firms. Similarly, the number of foreign employees just like foreign assets was a strong indicator of the expansionary drive of listed companies, hence, this econometric variable was considered important in determining the

**Table 6.16 Secondary data hypothesis 3 frequencies statistics**

	N		Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
	Valid	Missing							
JSEAltX	17	0	1,027,573,717,654	944,327,660,188	745,279,365,568	0.50	(0.21)	581,084,000	2,395,102,698,060
AltXMarketcap	17	0	17,003,739,908	18,295,529,156	11,180,437,234	0.34	(0.12)	83,012,000	39,918,378,301
CashInvestmentActivities	17	0	(2,304,743)	(409,718)	3,956,027	(1.17)	0.40	(10,943,658)	3,245,140
EarningsYield	17	0	(6.21)	(6.13)	15.71	(0.12)	0.01	(38.79)	20.48
ForeignAssets	17	0	4,311,868	2,419,720	5,809,637	1.78	2.23	-	18,647,835
ForeignEmployees	17	0	1,132	487	1,324	0.88	(0.88)	-	3,622
ForeignLiabilities	17	0	1,152,295	472,058	1,916,471	2.71	7.97	-	7,540,987
Goodwill	17	0	1,127,981	930,337	1,079,769	1.08	0.46	2,129	3,593,115
InvestmentsLoans	17	0	2,538,617	1,130,055	2,827,779	1.11	(0.01)	3,439	8,927,276
PatentsTrademarks	17	0	120,825	25,470	212,892	1.99	2.58	530	632,198
QuickRatio	17	0	7.00	4.02	7.65	1.98	3.84	1.60	29.21
ROA	17	0	(34.86)	(22.17)	43.03	(1.96)	4.59	(165.29)	10.13
TotalEquityLiabilities	17	0	23,713,515	13,299,192	26,037,728	1.15	(0.13)	125,905	77,783,111
Turnover	17	0	9,835,976	10,326,639	7,259,207	0.33	(0.47)	168,837	23,753,381

*N* = 17, Items in bracket have a negative value, *JSEAltX* is a product of total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies, *AltXMarketcap* Total market capitalisation of the JSE's AltX, *CashInvestmentActivities* cash from investment activities of the JSE's AltX listed firms, *EarningsYield* Earnings yield of the JSE's AltX listed companies, *ForeignAssets* Foreign assets of the JSE's AltX listed firms, *ForeignEmployees* Foreign employees of the JSE's AltX listed firms, *ForeignLiabilities* Foreign liabilities of the JSE's AltX listed companies, *Goodwill* Goodwill of the JSE's AltX registered firms, *InvestmentsLoans* Investments and loans of the JSE's AltX listed firms, *PatentsTrademarks* Patents and trademarks of the JSE's AltX listed firms, *QuickRatio* Quick ratio of the JSE's AltX registered companies, *ROA* Return on assets of the JSE's AltX listed firms, *TotalEquityLiabilities* Total equity and liabilities of the JSE's AltX listed firms, *Turnover* Turnover or total revenue of the JSE's AltX listed firm. The variables *CashInvestmentActivities*, *ForeignAssets*, *ForeignLiabilities*, *Goodwill*, *InvestmentsLoans*, *PatentsTrademarks*, *TotalEquityLiabilities* and *Turnover* are expressed in '000.

Significance and extent of firm expansion. The *ForeignEmployees* variable indicated a *mean* overseas staffing population of 1,132, *skewness* of 0.88 with a *maximum* out of the country employees of about 3,622.

More so, the volume of foreign liabilities indicated the exposure of the JSE's AltX listed firms to foreign investors, banks and companies, which reveals the quantum of international stakeholder confidence in these registered businesses (Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). Consequently, the *ForeignLiabilities* variable had a mean value of R 1,152,295,000, skewness of 2.71 with a maximum value of R 7,540,987,000. This relatively less than the total value for investments and loans of the JSE's AltX listed companies which has a maximum value of R 8,927,276,000. This therefore calls for further investigations, so as to ascertain its impact on the market capitalisation of the JSE's AltX, as well as on the expansionary drive of listed firms. Lastly, frequencies statistics for the following econometric variables *EarningsYield*, *ForeignAssets*, *Goodwill*, *InvestmentsLoans*, *PatentsTrademarks*, *QuickRatio*, *ROA*, *TotalEquityLiabilities* and *Turnover* was not discussed in this section because the datasets are the same with the data for hypothesis 1 and 2. Thus, the ensuing MLM equation will therefore determine if there exist within and between relationships between these variables.

### 6.7.8 HYPOTHESIS 3 SECONDARY DATA MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.17 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 3 (i.e. the rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion) with *LogJSEAltX* as the dependent variable. Model 1 of Table 6.17 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing share capital levels influence on the expansion and performance of the JSE's AltX listed firms. Since no predictors were included in the model at Level 1, the intercept is equal to the *LogJSEAltX* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of share capital levels on the expansion and performance of listed firms by 11.637. This can be further illustrated using the test (*t*) statistic, which is presented as  $t$  (degrees of freedom) = *t* statistic,  $p$  = *p* value.

This implies that ( $M = 11.637$ ,  $SE = 0.230$ ) the impact of firm listing on the JSE's AltX is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(17) = 50.600$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error).

**Table 6.17 Hypothesis 3 MLM equation for the secondary data**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5A	Model 5B	Model 5C
$\beta_0$	11.637*** (0.230)	15.000** (4.708)	2.723 (4.146)	2.723 (4.146)	26.727*** (6.675)	23.921** (7.731)	26.651*** (6.751)
LogAltXMarketcap		1.072*** (0.181)	1.384*** (0.167)	1.384*** (0.167)			
LogCashInvestmentActivities		0.017 (0.009)	-0.002 (0.008)	-0.002 (0.008)		0.025 (0.017)	0.029 (0.016)
LogEarningsYield		-0.421** (0.116)	-0.170 (0.110)	-0.170 (0.110)	-0.206 (0.248)		-0.195 (0.250)
LogForeignAssets		0.344** (0.108)	0.092 (0.101)	0.092 (0.101)	0.633** (0.176)	0.577** (0.193)	0.635** (0.176)
LogForeignEmployees		0.054 (0.041)	0.015 (0.042)	0.015 (0.042)	0.161 (0.085)	0.171 (0.085)	0.166 (0.085)
LogForeignLiabilities		0.303*** (0.076)	0.141* (0.068)	0.141* (0.068)	0.381** (0.137)	0.343* (0.158)	0.374* (0.139)
LogGoodwill		0.181 (0.120)	0.197 (0.121)	0.197 (0.121)	-0.401 (0.219)	-0.453 (0.222)	-0.391 (0.222)
LogInvestmentsLoans		0.475 (0.243)	0.004 (0.221)	0.004 (0.221)	1.511*** (0.293)	1.475*** (0.309)	1.534*** (0.287)
LogPatentsTrademarks		0.077 (0.056)	0.003 (0.054)	0.003 (0.054)	0.015 (0.120)	-0.004 (0.132)	0.019 (0.122)
LogQuickRatio		0.350** (0.110)	0.092 (0.100)	0.092 (0.100)	0.432* (0.205)	0.355 (0.228)	0.433* (0.208)
LogROA		0.066* (0.030)	0.011 (0.030)	0.011 (0.030)	0.120 (0.061)	0.094 (0.065)	
LogTotalEquityLiabilities		-0.574 (0.341)	-0.281 (0.353)	-0.281 (0.353)	-1.124 (0.764)	-1.153 (0.774)	-1.190 (0.762)
LogTurnover		-2.671** (0.681)	-0.812 (0.669)	-0.812 (0.669)	-2.931* (1.394)	-2.317 (1.586)	-2.881 (1.411)
LogAMc*CashInvestmentActivities					0.003 (0.002)		
LogAMc*EarningsYield						-0.008 (0.028)	
LogAMc*ROA							0.010 (0.006)
$\sigma_e^2$	0.043 (14.573)	0.000 (0.000)	0.001 (0.001)	0.001 (0.001)	0.008 (0.005)	0.008 (0.005)	0.006 (0.005)
$\sigma_v^2$	0.365 (0.181)		0.001 (0.000)	0.001 (0.000)			
$\sigma_u^2$	0.239 (14.574)	0.003** (0.001)	0.000 (0.000)	0.000 (0.000)			
$\sigma_v^2 \times \sigma_u^2$				0.001 (0.000)	0.006 (0.000)	0.008 (0.000)	0.009 (0.000)
Log-likelihood	-23.22	42.15	25.59	25.59	11.79	11.53	11.64
Deviance	46.44	-84.30	-51.19	-51.19	-23.58	-23.06	-23.28
AIC	52.44	-52.30	-19.19	-19.19	6.42	6.94	6.72
Fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes	Yes	Yes

$N = 17$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX indicators,  $\sigma_u^2$  the level two variance i.e. JSE's AltX companies,  $\sigma_v^2$  the level three variance i.e. SMMEs in South Africa, AIC Akaike's Information Criterion, *LogAMc\*CashInvestmentActivities* is the interaction effect between the JSE's AltX Market Cap x the total cash from investment activities of the JSE's AltX listed companies, *LogAMc\*EarningsYield* is the interaction effect between the JSE's AltX Market Cap x earnings yield of the JSE's AltX listed firms, *LogAMc\*ROA* is the interaction effect between the JSE's AltX Market Cap x return on assets of the JSE's AltX listed firms. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues.  
\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 did not indicate substantial evidence of within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positive at all levels. However, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Level 2, while the level 3 variance was significant at 5% levels. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -23.22 with a *deviance* statistic of 46.44, while its *AIC* was 52.44, which makes a lot of sense in the following model analysis.

Next, Model 2 of Table 6.17 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = 42.15, *deviance* = -84.30, *AIC* = -52.30,  $p < 0.001$ ). Hence, the results from Hypothesis 3 tests indicated that the rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion. This is consistent with findings from similar studies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of -84.30 against 96.329 and 46.44 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 15.000 (*SE* 4.708,  $p < 0.01$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 15.000 in the share capitalisation levels and likelihood of listed firms on the JSE's AltX to expand their operations. That said, as expected the total market capitalisation of the JSE's AltX had a positive impact on the JSE's AltX listed firm's expansion, since the coefficient  $\beta_1$  (1.072) of *LogAltXMarketcap* was positive and strongly significant (*SE* = 0.181,  $p < 0.001$ ). However, the earnings yield of the JSE's AltX listed firms (*LogEarningsYield*) had a negative and significant effect on the market cap and expansionary drive of listed firms ( $\beta_3 = -0.421$ , *SE* = 0.116,  $p < 0.01$ ). Evidently, this is due to the fact that the largely negative earnings yield was not comparable to the prevailing long-term interest rates. Therefore, this impacted negatively on the dividend being issued to shareholders and the retained earnings that was ploughed back into the business for expansionary purposes, as well as the attractiveness of these stocks to investors, consequently resulting in a negative relationship with the market cap of the lower bourse (Mzilikazi, 2015; Harvey, 2016; Mehta and Ward, 2017; Pike, Puchert and Chinyamurindi, 2018).



Furthermore, predictably, the foreign assets of the JSE's AltX listed firms (i.e. foreign portfolios' investments, including foreign currencies) was linked with increasing market cap levels and the expansionary drive of these companies. Consequently, any 1-unit increase in the coefficient of *LogForeignAssets* ( $\beta_4$ ) would lead to 0.344 times growth in the share capitalisation levels and the likelihood of listed firms on the JSE's AltX to expand their operations ( $SE = 0.108$ ,  $p < 0.01$ ). Also, an increase in the foreign liabilities of the JSE's AltX listed firms as indicated by the *LogForeignLiabilities* variable is associated with rising share capitalisation levels and the likelihood of listed firms on the JSE's AltX to expand their operations ( $\beta_6 = 0.303$ ,  $SE = 0.076$ ,  $p < 0.001$ ). This implies that foreign loan advances, liabilities or debts, obligations, letters of credit, covenants and indemnities whether indirect or direct and absolute or contingent matter for listed firms on the JSE's AltX, especially during a period of weakening value of the rand and high interest rates in South Africa.

As earlier stated earlier, the *LogQuickRatio* proxy variable measures the ability of the JSE's AltX listed companies to settle short-term liabilities with its near cash or quick assets. Based on the results, *LogQuickRatio* was found to be positively associated with rising share capitalisation levels and the likelihood of listed firms on the JSE's AltX to expand their operations ( $\beta_{10} = 0.350$ ,  $SE = 0.110$ ,  $p < 0.01$ ). Also, a 1-unit increase in the coefficient of *LogROA* ( $\beta_{11}$ ) led to a 0.066 times positive impact on share capitalisation levels and the likelihood of listed firms on the JSE's AltX to expand their operations ( $SE = 0.030$ ,  $p < 0.05$ ). Consequently, the average capital intensity of 7 per cent for the JSE's AltX listed companies indicates that their ROAs is considered to be generally good. However, the turnover or revenue of the JSE's AltX listed firms (i.e. *LogTurnover*) was negative and significantly related to the share capitalisation levels and the likelihood of these firms expanding their operations ( $\beta_{13} = -2.671$ ,  $SE = 0.681$ ,  $p < 0.01$ ). This implies that there is a need to drive up the revenue earning potentials of these companies, ceteris paribus (Mashaba, 2014; Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). More so, just like the previous models, there was no evidence of within-group variation in Model 2. However, there was evidence of between group variation in Level 2, which indicates that the B-BBEE composite of the JSE's AltX could trigger some variations in the outcome variable ( $\sigma_u^2 = 0.003$ ,  $SE = 0.001$ ,  $p < 0.01$ ).

Subsequently, in Model 3 of Table 6.17 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were identical to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 3 was fully supported ( $\log \text{likelihood} = 25.59$ ,  $\text{deviance} = -51.19$ ,  $AIC = -19.19$ ,  $p < 0.001$ ). The coefficient of the *LogAltXMarketcap*  $\beta_1$  (1.384) was positive and strongly significant ( $SE = 0.167$ ,  $p < 0.001$ ). While, the coefficient of *LogForeignLiabilities*  $\beta_6$  (0.141) was positive

and significant ( $SE = 0.068$ ,  $p < 0.05$ ). Lastly, there was no evidence of within-group and between-group variation in Model 3. Afterwards, in Model 4 of Table 6.17 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 3's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = 25.59$ ,  $deviance = -51.19$ ,  $AIC = -19.19$ ,  $p < 0.001$ ). However, the goodness of fit  $deviance$  statistic had the same level of robustness with the previous models. The ensuing results from Model 4 indicated that the test variable outcomes were identical to that of Model 3. The coefficient of the  $LogAltXMarketcap$   $\beta_1$  (1.384) was positive and strongly significant ( $SE = 0.167$ ,  $p < 0.001$ ). Equally, the coefficient of  $LogForeignLiabilities$   $\beta_6$  (0.141) was positive and significant ( $SE = 0.068$ ,  $p < 0.05$ ). In addition, there was no evidence of within-group and between-group variation in Model 4.

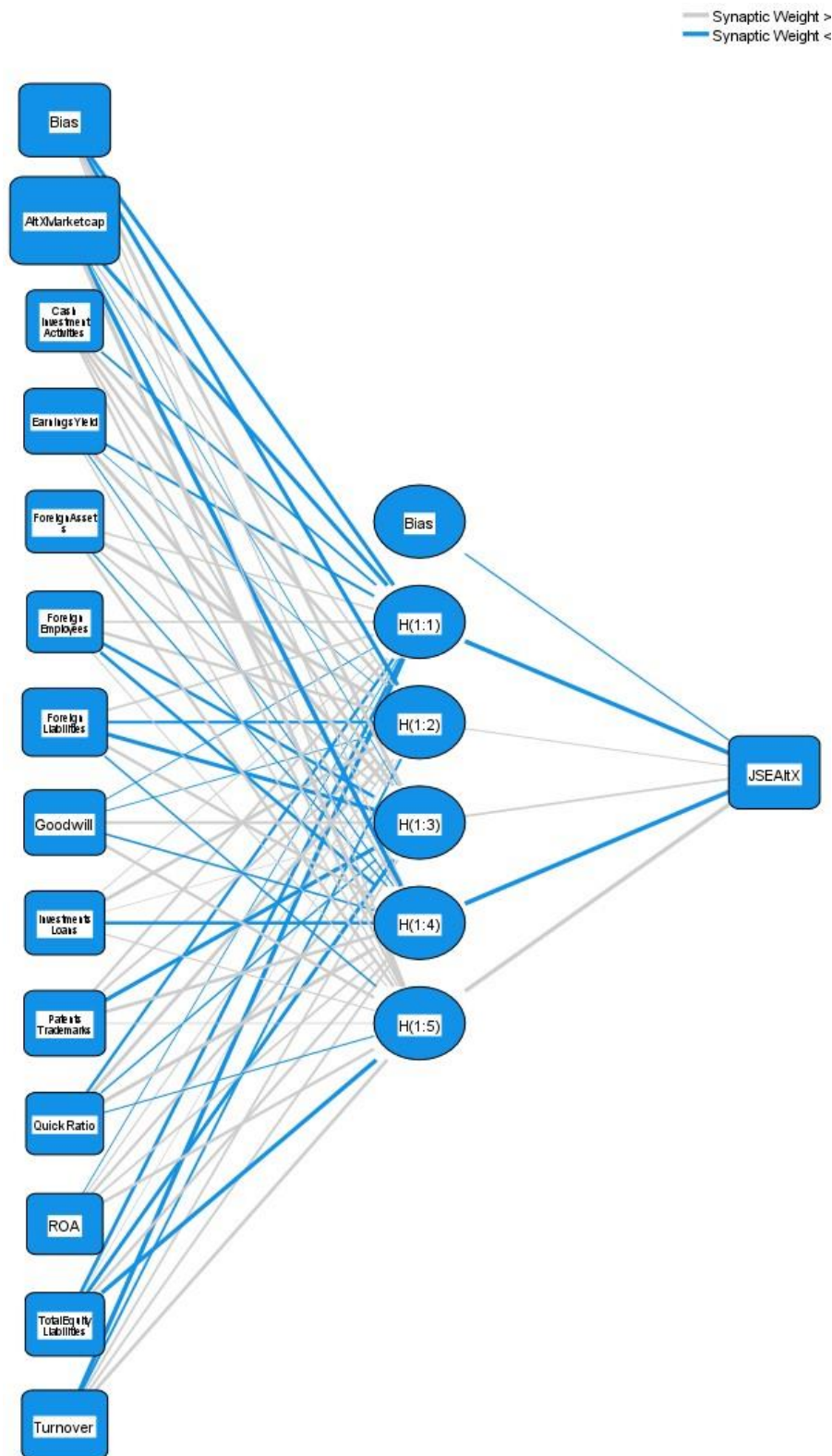
In Model 5 of Table 6.17 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented with interaction effects. Model 5A estimates suggests that Hypothesis 3's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 11.79$ ,  $deviance = -23.58$ ,  $AIC = 6.42$ ,  $p < 0.001$ ). Meanwhile, the resultant outcomes from Model 5A showed that the test variable results were comparable to that of Model 2. The researcher observed that the addition of an interaction variable  $LogAMc * CashInvestmentActivities$  (which is the interaction effect between the JSE's AltX Market Cap multiplied by the cash from investment activities of the JSE's AltX listed firms) made the significance level of the remaining independent variables to become stronger. The coefficient of the intercept  $\beta_0$  (26.727) was positive and significant ( $SE = 6.675$ ,  $p < 0.001$ ), the coefficient of  $LogForeignAssets$   $\beta_4$  (0.633) was positive and significant ( $SE = 0.176$ ,  $p < 0.01$ ), the coefficient of  $LogForeignLiabilities$   $\beta_6$  (0.381) was positive and significant ( $SE = 0.137$ ,  $p < 0.01$ ). Equally, the coefficient of  $LogInvestmentsLoans$   $\beta_8$  (1.511) was positive and significant ( $SE = 0.293$ ,  $p < 0.001$ ). Furthermore, the coefficient of  $LogQuickRatio$   $\beta_{10}$  (0.432) was positive and significant ( $SE = 0.205$ ,  $p < 0.05$ ), while the coefficient of  $LogTurnover$   $\beta_{13}$  (-2.931) was negative and significant ( $SE = 1.394$ ,  $p < 0.05$ ). Lastly, the above model showed that there was no evidence of within-group and between-group variation in Model 5A.

Also, Model 5B's estimates submits that Hypothesis 3's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 11.53$ ,  $deviance = -23.06$ ,  $AIC = 6.94$ ,  $p < 0.001$ ). In fact, the fit statistics was almost equal to that of Model 5A. Meanwhile, the resultant outcomes from Model 5B showed that the test variable results were comparable to that of Model 2 and 5A. The researcher observed that the addition of an

interaction variable *LogAMc\*EarningsYield* (which is the interaction effect between the JSE's AltX Market Cap multiplied by the earnings yield of the JSE's AltX listed firms) made the significance level of the remaining independent variables to become more robust. The coefficient of the intercept  $\beta_0$  (23.921) was positive and significant ( $SE = 7.731, p < 0.01$ ), the coefficient of *LogForeignAssets*  $\beta_4$  (0.577) was positive and significant ( $SE = 0.193, p < 0.01$ ), the coefficient of *LogForeignLiabilities*  $\beta_6$  (0.343) was positive and significant ( $SE = 0.158, p < 0.05$ ). Equally, the coefficient of *LogInvestmentsLoans*  $\beta_8$  (1.475) was positive and significant ( $SE = 0.309, p < 0.001$ ). In addition, the above model showed that there was no evidence of within-group and between-group variation in Model 5B.

In the same way, Model 5C's estimates reveals that Hypothesis 3's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 11.64, deviance = -23.28, AIC = 6.72, p < 0.001$ ). In fact, the fit statistics was smaller when compared to the Model 5B. Meanwhile, the resultant outcomes from Model 5C showed that the test variable result was comparable to that of Model 2, 5A and 5B. The researcher observed that the addition of an interaction variable *LogAMc\*ROA*, which is the interaction effect between the JSE's AltX Market Cap multiplied by the ROA of the JSE's AltX listed firms made the significance level of the remaining independent variables to become more robust. The coefficient of the intercept  $\beta_0$  (26.651) was positive and significant ( $SE = 6.751, p < 0.001$ ), the coefficient of *LogForeignAssets*  $\beta_4$  (0.635) was positive and significant ( $SE = 0.176, p < 0.01$ ), the coefficient of *LogForeignLiabilities*  $\beta_6$  (0.374) was positive and significant ( $SE = 0.139, p < 0.05$ ). Equally, the coefficient of *LogInvestmentsLoans*  $\beta_8$  (1.534) was positive and significant ( $SE = 0.287, p < 0.001$ ). Likewise, the coefficient of *LogQuickRatio*  $\beta_{10}$  (0.433) was positive and significant ( $SE = 0.208, p < 0.05$ ). Lastly, the above model showed that there was no evidence of within-group and between-group variation in Model 5C. Similarly, the LR test statistic shows that Model 2 was a better fit to the succeeding models (Leckie, 2013). Also, there was no evidence of significant variation in all Models (except in Model 1 and 2). In Model 1, the level 3 variation (i.e. the number of SMMEs in South Africa) can lead to approximately R 6,205,443,464 difference in the share capitalisation levels – this would definitely impact on the expansion plans of the listed firms on the JSE's AltX, (i.e.  $\sigma_v^2 \times AltXMarketcap[\text{mean}]$  or  $0.364946 * 17,003,739,907.82$ ). But this has a margin of error of about 0.181. In Model 2, the level 2 variation (i.e. the number of JSE's AltX companies) can lead to about R 42,295,103 (i.e.  $\sigma_u^2 \times AltXMarketcap[\text{mean}]$  or  $0.002487 * 17,003,739,907.82$ ) difference in the share capitalisation levels – this would definitely impact on the expansion plans of the listed firms on the JSE's AltX, ceteris paribus. This outcome is supported by a very low margin of error of about 0.001.

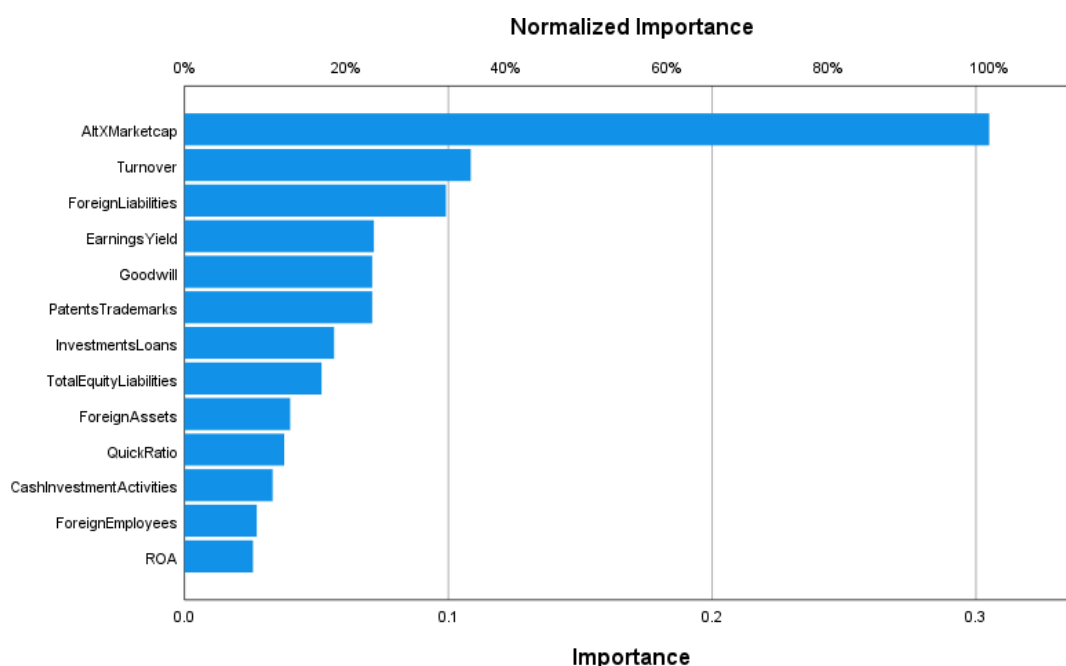
### 6.7.9 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 3 SECONDARY DATA



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.9: Multilayer perceptron network diagram for Hypothesis 3 secondary data (Source: Authors' compilation)**

ANNs was used to predict various Hypothesis 3 secondary data iterations. In Figure 6.9 the multilayer perceptron network for Hypothesis 3 secondary data variables has 5 layers, 1 bias term and 1 output (i.e. *JSEAltX*). More so, in the case processing summary, the sample had  $N = 13$  or 77% (with *relative error* 0.008) *Training* parameters and  $N = 4$  or 24 % (with *relative error* 0.003) *Testing* parameters, which comprised on 17 valid datasets. Also, the hidden layer 1 had a *Bias JSEAltX* predicted output layer of -0.090, H(1:1) had a *JSEAltX* predicted output layer of -0.683, H(1:2) had a *JSEAltX* predicted output layer of 0.059, H(1:3) had a *JSEAltX* predicted output layer of 0.197, H(1:4) had a *JSEAltX* predicted output layer of -0.919 and H(1:5) had a *JSEAltX* predicted output layer of 0.497.



**Figure 6.10: Independent variable importance analysis for Hypothesis 3 secondary data (Source: Authors' compilation)**

The rich insights provided by the perceptron ANNs ultimately showed (in Figure 6.10) that the independent variables had a normalised ranked importance of 100% for *AltXMarketcap*, 36% for *Turnover*, 33% for *ForeignLiabilities*, 24% for *EarningsYield*, 23% for *Goodwill*, 23% for *PatentsTrademarks*, 19% for *InvestmentsLoans*, 17% for *TotalEquityLiabilities*, 13% for *ForeignAssets*, 12% for *QuickRatio*, 11% for *CashInvestmentActivities*, 9% for *ForeignEmployees* and 9% for *ROA*. This implies that the liquidity of the JSE's AltX is absolutely essential for firm growth, as a source of cheap and interest free capital financing instrument. Also, listed firms should find ways and means of improving their revenue generation capacity, so as to make them more attractive to foreign creditors and investors who are the major financiers of these firms, *ceteris paribus*.

#### 6.7.10 SECONDARY DATA HYPOTHESIS 4 FREQUENCIES STATISTICS

As discussed in the previous section, given that one of the main purposes of this study is to use a rational, specific and targeted approach to initiate and sustain the competencies of all the listed firms on the JSE's AltX, so that these companies can be strengthened over time, and thus lead to performance optimisation in the long run, the researcher considered it crucial to probe into the mandatory compliance requirement of the JSE's AltX. By so doing, it would become possible to ascertain the real impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms. The researcher intends to answer the research question "How does the compliance requirement of the AltX impact on the B-BBEE score performance of listed firms?" through the determination of the impact that the B-BBEE compliance/exchange guidelines has on the JSE's AltX listed firm's performance. This led to the formulation of Hypothesis 4: The higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score, and vice versa. Consequently, various relevant macroeconomic variables were put together in order to ascertain this impact. Table 6.18 shows the frequencies statistics for the JSE AltX secondary data which was used to test hypothesis 4. As indicated in the variable identification section, *JSEAltX* (which is the dependent variable in Hypothesis 4A and an independent variable in Hypothesis 4B) is a proxy for the product of the JSE's AltX market capitalisation and the number of the JSE's AltX listed companies. The resultant frequencies statistics were *mean* = 1,027,573,717,654, *median* = 944,327,660,188, *standard deviation* = 745,279,365,568, *skewness* = 0.50, *minimum* = 581,084,000 and *maximum* = 2,395,102,698,060. Since, this variable like several others had a large value, the researcher decided to use their logarithm value to compute the MLM analysis.

Correspondingly, *BBBEEscorecomposite* (which is the variable representing the B-BBEE composite score of all the JSE's AltX listed firms) had a *mean* of 249.98, *median* of 240.81, *standard deviation* of 196.70, *skewness* of 0.23, *minimum* of 25.00 and a *maximum* of 561.00. This implies that as the JSE's AltX compliance requirements improved over time, it also had a positive impact on the B-BBEE score of listed firms, but not without some reservations. As matter of fact, translating democratic values and dividends into fairness, social justice and equal rights implies that citizens' rights should encompass both political and economic rights, so that the overall quality of life of all citizens can be improved upon, while trying to build a free, united, sovereign and democratic South Africa. Moreover, B-BBEE ratings qualify listed firms to participate in government tenders and procurement. Some scholars have advanced that the B-BBEE programme implementation was promoting tender corruption and

putting an economic strain on SMEs (Pike, Puchert, and Chinyamurindi, 2018). Mokgobinyane (2017) findings was at variance with that of Mzilikazi (2015), as well as that of Van der Merwe and Ferreira (2014). This informs further studies, as proposed in this study. The profit after interest and tax (PAIT) variable is denoted by the proxy *ProfitAfterInterestTax*. This is known to be the most suitable barometer for measuring the capability of a listed entity to generate profit, because it incorporates both the operating and interest incomes after tax. Similarly, it is also a useful tool in determining the direction of the stock price of a quoted company. Its *mean* indicated a loss of R 9,547,000 with a *skewness* of negative 0.33, a *minimum* loss value of R 2,410,872,000 and a PAIT *maximum* value of R 1,720,331, 000. Consequently, this frequencies statistic requires a microscopic examination in order to demonstrate the growing significance of the phenomenon under study.

Likewise, the value of transactions variable *ValueTransactions* showed that the *mean* value of R 29,066,366,000 for all the JSE's AltX listed companies' transactions was moderate, with a *skewness* of 3.46, a *minimum* value of R 13,136,000 at its inception to a *maximum* value of R 274,093,826,000 was absolutely encouraging, but warrants further studies. As noted in the literature review chapter, SMEs can be defined by revenue, size and the number of employees a firm hire (Bosma and Kelley, 2019; Bowmaker-Falconer and Herrington, 2020; Bosma et al., 2020). The average number of employees of all the JSE's AltX listed companies was 17,758 with a *maximum* personnel count of 97,058 per annum. However, this figure did not reveal all the required information (e.g. the salaries and wages of these firms). It was therefore important to use the *SalariesWages* variable to measure the impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms, *ceteris paribus*. This is because this gauge precisely measures the impact of job creation on personnel income levels. Also as stated earlier, there is a dire need to redistribute income in South Africa – in furtherance of the objectives of the ANC government. It is thus imperative to deeply probe this indicator given its *mean* value of R 1,194,363,000 with *skewness* of 0.53, *minimum* value of R 2,115,000 and *maximum* value of R 3,503,292,000. Also, adequate empirical analysis will help to ameliorate the gaps and inconsistencies in both the past and present studies. Hence, contribute to new knowledge in this area of study. Lastly, frequencies statistics for the following econometric variables *Turnover*, *ValueAdded*, *PatentsTrademarks*, *ROA*, *EarningsYield*, *Ebitda*, *Goodwill* and *OperatingProfit/Loss* was not discussed in this section because the datasets are the same with the data for hypothesis 1, 2 and 3. Thus, the ensuing MLM equation will therefore determine if there exist within and between relationships between these variables, as well as establish the degree of its influence on listed firms operations.

**Table 6.18 Secondary data hypothesis 4 frequencies statistics**

	N		Mean	Median	Std. Deviation	Skewness	Kurtosis	Minimum	Maximum
	Valid	Missing							
JSEAltX	17	0	1,027,573,717,654	944,327,660,188	745,279,365,568	0.50	(0.21)	581,084,000	2,395,102,698,060
BBBEScorecomposite	17	0	249.98	240.81	196.70	0.23	(1.41)	25.00	561.00
ProfitAfterInterestTax	17	0	(9,547)	(7,623)	1,043,258	(0.33)	0.69	(2,410,872)	1,720,331
Turnover	17	0	9,835,976	10,326,639	7,259,207	0.33	(0.47)	168,837	23,753,381
ValueAdded	17	0	1,487,472	526,662	1,582,464	0.68	(0.96)	3,854	4,589,039
ValueTransactions	17	0	29,066,366	4,811,222	66,912,345	3.46	12.78	13,136	274,093,826
PatentsTrademarks	17	0	120,825	25,470	212,892	1.99	2.58	530	632,198
ROA	17	0	(34.86)	(22.17)	43.03	(1.96)	4.59	(165.29)	10.13
EarningsYield	17	0	(6.21)	(6.13)	15.71	(0.12)	0.01	(38.79)	20.48
Ebitda	17	0	652,075	64,883	1,395,592	0.81	(0.42)	(1,440,493)	3,370,394
Goodwill	17	0	1,127,981	930,337	1,079,769	1.08	0.46	2,129	3,593,115
SalariesWages	17	0	1,194,363	373,681	1,270,052	0.53	(1.34)	2,115	3,503,292
OperatingProfit/Loss	17	0	(75,237)	671	1,092,636	0.36	0.36	(2,093,365)	2,093,159

*N* = 17, Items in bracket have a negative value, *JSEAltX* is a product of total market capitalisation of the JSE's AltX by the number of the JSE's AltX listed companies, *BBBEScorecomposite* Broad-Based Black Economic Empowerment composite score of the JSE's AltX listed companies, *ProfitAfterInterestTax* Profit after interest and tax of the JSE's AltX listed companies, *Turnover* Turnover or total revenue of the JSE's AltX, *ValueAdded* Value added of the JSE's AltX, *ValueTransactions* Total value of transactions of the JSE's AltX listed firms, *PatentsTrademarks* Patents and trademarks of the JSE's AltX, *ROA* Return on assets of the JSE's AltX listed companies, *Ebitda* Earnings before interest, tax, depreciation and amortization of the JSE's AltX listed firms, *Goodwill* Goodwill of the JSE's AltX listed firms, *SalariesWages* Salaries and wages of the JSE's AltX listed companies, *OperatingProfit/Loss* Operating profit/loss of the JSE's AltX listed firms. The variables *ProfitAfterInterestTax*, *Turnover*, *ValueAdded*, *ValueTransactions*, *Ebitda*, *Goodwill*, *SalariesWages* and *OperatingProfitLoss* are expressed in '000.



### 6.7.11 HYPOTHESIS 4A SECONDARY DATA MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.19 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 4A (i.e. impact of compliance requirements on the B-BBEE score performance of listed firms) with *LogJSEAltX* as the dependent variable. Model 1 of Table 6.19 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of compliance requirements on the B-BBEE score performance of listed firms. Since no predictors were included in the model at Level 1, the intercept is equal to the *LogJSEAltX* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms by 11.637. This can be further illustrated using the test (*t*) statistic, which is presented as *t* (degrees of freedom) = *t* statistic, *p* = *p* value.

This implies that ( $M = 11.637$ ,  $SE = 0.230$ ) the impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(17) = 50.600$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 did not indicate substantial evidence of within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positive at all levels. However, the between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Level 2, while the level 3 variance was positive and significant at the 5% levels. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -23.22 with a *deviance* statistic of 46.44, while its *AIC* was 52.44, which makes a lot of sense in the following model analysis.

Next, Model 2 of Table 6.19 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant (*log likelihood* = 15.00, *deviance* = -30.01, *AIC* = -0.01,  $p < 0.001$ ). Hence, the results from Hypothesis 4A tests indicated that the higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score, and vice versa. This is consistent with findings from similar

studies (Mashaba, 2014; Van der Merwe and Ferreira, 2014; Heerden, 2015; Mzilikazi, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of -30.01 against 96.329 and 46.44 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of 11.754 ( $SE = 1.432, p < 0.001$ ). This means the coefficient of the equation has a positive direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted rise of 11.754 times more compliance requirements on the JSE's AltX impacting on the B-BBEE score performance of listed firms. That said, the composite B-BBEE score rating of the entire JSE's AltX listed firms had a positive impact on the compliance requirements of the lower bourse, since the coefficient  $\beta_1$  (0.881) of *LogBBBEEscorecomposite* was positive and significant ( $SE = 0.378, p < 0.05$ ). According to Kassen (2018) one of the main reasons for establishing the JSE's AltX is to assist young high-growth firms to identify potential B-BBEE partners and groups who might want to tap into new/existing investment opportunities or raise capital in a regulated financial market. Moreover, interventions made by the JSE such as by placing a continuing obligation on quoted firms to publish their B-BBEE compliance reports on their websites, and thereafter, make an announcement on the SENS that this disclosure requirement has been carried out contributes significantly to the positive relationship identified herein. Likewise, unsurprisingly, the PAIT of the JSE's AltX listed companies (*LogProfitAfterInterestTax*) had a positive and strongly significant effect on both the compliance requirements and the B-BBEE score performance of these listed firms ( $\beta_2 = 0.218, SE = 0.028, p < 0.001$ ). Obviously, this is due to the fact that since the PAIT is the most suitable barometer for measuring the capability of a listed entity to generate profit, most investors, creditors as well as other stakeholders use it to time their investment decisions concerning the duration of loans, buy-back and sell-off etcetera (Mlonzi et al., 2010; Mzilikazi, 2015; Harvey, 2016; Mehta and Ward, 2017; Pike, Puchert and Chinyamurindi, 2018).

Furthermore, predictably, the value of transactions of the JSE's AltX listed firms was positively related with the dependent variable. This implies that adhering to the strict compliance requirements of the JSE's AltX helped to standardise firm products and services, which translates to more sales, *ceteris paribus*. Consequently, any 1-unit increase in the coefficient of *LogValueTransactions* ( $\beta_5$ ) would lead to a 0.254 times positive impact on the compliance requirements of the JSE's AltX which is linked with the B-BBEE score performance of these firms ( $SE = 0.116, p < 0.05$ ). Also, this effect could lead to more patents and innovations being recorded by the JSE's AltX listed firms as indicated by the *LogPatentsTrademarks* variable which is positively

**Table 6.19 Hypothesis 4A MLM equation for the secondary data**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5A	Model 5B	Model 5C
$\beta_0$	11.637*** (0.230)	11.754*** (1.432)	11.754*** (1.432)	11.754*** (1.432)	7.174*** (1.333)	12.848*** (0.757)	12.457*** (1.693)
LogBBBEEscorecomposite		0.881* (0.378)	0.881* (0.378)	0.881* (0.378)			
LogProfitAfterInterestTax		0.218*** (0.028)	0.218*** (0.028)	0.218*** (0.028)		0.220*** (0.027)	0.217*** (0.025)
LogTurnover		0.099 (0.358)	0.099 (0.358)	0.099 (0.358)	1.506*** (0.280)		0.307 (0.310)
LogValueAdded		-0.092 (0.735)	-0.092 (0.735)	-0.092 (0.735)	-0.738 (0.590)	-0.159 (0.634)	-0.360* (0.155)
LogValueTransactions		0.254* (0.116)	0.254* (0.116)	0.254* (0.116)	0.069 (0.151)	0.251* (0.116)	0.259* (0.118)
LogPatentsTrademarks		0.293** (0.107)	0.293** (0.107)	0.293** (0.107)	0.137 (0.116)	0.269** (0.083)	0.290* (0.111)
LogROA		0.410*** (0.062)	0.410*** (0.062)	0.410*** (0.062)	0.333*** (0.068)	0.413*** (0.062)	0.402*** (0.054)
LogEarningsYield		-0.154 (0.101)	-0.154 (0.101)	-0.154 (0.101)	-0.056 (0.112)	-0.154 (0.100)	-0.157 (0.103)
LogEbitda		-0.124*** (0.017)	-0.124*** (0.017)	-0.124*** (0.017)	-0.089*** (0.018)	-0.126*** (0.016)	-0.123*** (0.017)
LogGoodwill		-0.817*** (0.105)	-0.817*** (0.105)	-0.817*** (0.105)	-0.968*** (0.129)	-0.832*** (0.105)	-0.834*** (0.111)
LogSalariesWages		0.040 (0.704)	0.040 (0.704)	0.040 (0.704)	0.631 (0.528)	0.100 (0.606)	
LogOperatingProfit/Loss		-0.123*** (0.014)	-0.123*** (0.014)	-0.123*** (0.014)	-0.132*** (0.019)	-0.124*** (0.011)	-0.126*** (0.016)
LogBBBEE*ProfitAfterInterestTax					0.090*** (0.015)		
LogBBBEE*Turnover						0.117 (0.034)	
LogBBBEE*SalariesWages							0.129** (0.041)
$\sigma_e^2$	0.043 (14.573)	0.010** (0.003)	0.005 (0.003)	0.005 (0.003)	0.008 (0.006)	0.005 (0.000)	0.009* (0.004)
$\sigma_v^2$	0.365* (0.181)		0.000 (0.000)	0.000 (0.000)			
$\sigma_u^2$	0.239 (14.574)	9.35e-23 (0.000)	0.000 (0.000)	0.000 (0.000)			
$\sigma_v^2 \times \sigma_u^2$				0.005 (0.000)	0.008 (0.000)	0.005 (0.004)	0.002 (0.000)
Log-likelihood	-23.22	15.00	15.00	15.00	10.94	14.85	14.00
Deviance	46.44	-30.01	-30.01	-30.01	-21.88	-29.70	-28.01
AIC	52.44	-0.01	-0.01	-0.01	6.12	-1.70	-0.01
Fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes	Yes	Yes

$N = 17$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX indicators,  $\sigma_u^2$  the level two variance i.e. JSE's AltX companies,  $\sigma_v^2$  the level three variance i.e. SMMEs in South Africa, AIC Akaike's Information Criterion *LogBBBEE\*ProfitAfterInterestTax* is the interaction effect between the B-BBEE composite score x the total profit after interest and tax of the JSE's AltX listed firms, *LogBBBEE\*Turnover* is the interaction effect between the B-BBEE composite score x aggregate turnover of the JSE's AltX listed firms, *LogBBBEE\*SalariesWages* is the interaction effect between the B-BBEE composite score x the cumulative salaries and wages of the JSE's AltX listed firms. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

associated with the compliance requirements of the JSE's AltX having an impact on the B-BBEE score performance of these firms ( $\beta_6 = 0.293$ ,  $SE = 0.107$ ,  $p < 0.01$ ). Expectedly, the return on assets (i.e. *LogROA*) was positive

and strongly related to the dependent variable ( $\beta_7 = 0.410$ ,  $SE = 0.062$ ,  $p < 0.001$ ). It therefore implies that the compliance requirements of the JSE's AltX and the B-BBEE score of these companies can be linked with how profitable a registered firms' assets can generate returns on investment, *ceteris paribus* (Mashaba, 2014). However, the comparative short-term profitability positions between companies and industries as represented by the Ebitda (i.e. *LogEbitda*) of the JSE's AltX listed firms was negative and strongly significant with the rising compliance requirements of the JSE's AltX ( $\beta_9 = -0.124$ ,  $SE = 0.017$ ,  $p < 0.001$ ). This is because as a company's financial status improves, its focus on the utilisation of firm listing as a tool to enhance its liquidity reduces and vice versa following both TOT and POT postulations (Bukalska, 2019; Agyei, Sun and Abrokwah, 2020).

More so, the *Goodwill* proxy variable measures the impact that firm listing brings to the balance sheet based on the brand name and reputation of these companies. Based on the results, *Goodwill* was found to be negatively associated with higher compliance requirements and the B-BBEE score rating of the JSE's AltX listed firms, *ceteris paribus* ( $\beta_{10} = -0.817$ ,  $SE = 0.105$ ,  $p < 0.001$ ). Thus, the premium resulting from M&As is normally overpriced and leads to high rate of adjusted impairment over time. Perhaps, the allocation of a company's share based on race and not a track record of entrepreneurial success is counter-productive here. Similarly, unexpectedly, the operating profit (and loss) was negative and significantly related to stringent compliance requirements and the B-BBEE score rating of the JSE's AltX listed firms, *ceteris paribus*. This is perhaps due to the fact that between 2007-2014 the cumulative operating loss of all the listed firms on the JSE's AltX was significant, probably as a result of the consequences and aftermath shocks associated with the stock market crash of 2008. Hence, a 1-unit increase in the coefficient of *LogOperatingProfit/Loss* ( $\beta_{12}$ ) would lead to a -0.123 times negative impact on higher compliance requirements and the B-BBEE score rating of the JSE's AltX listed firms, *ceteris paribus* ( $SE = 0.014$ ,  $p < 0.001$ ). In addition, there was substantial evidence of within-group (i.e. Level 1) variation in Model 2.

Subsequently, in Model 3 of Table 6.19 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were identical to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 4A was fully supported (*log likelihood* = 15.00, *deviance* = -30.01, *AIC* = -0.01,  $p < 0.001$ ). The coefficient of the intercept  $\beta_0$  (11.754) was positive and significant ( $SE = 1.432$ ,  $p < 0.001$ ), the coefficient of the *LogBBBEEscorecomposite*  $\beta_1$  (0.881) was positive and strongly significant ( $SE = 0.378$ ,  $p < 0.05$ ). Similarly, the coefficient of *LogProfitAfterInterestTax*  $\beta_2$  (0.218) was positive and significant ( $SE = 0.028$ ,  $p < 0.001$ ). Likewise, *LogValueTransactions* was positive and significant ( $\beta_5 = 0.254$ ,  $SE = 0.116$ ,  $p$

< 0.05), *LogPatentsTrademarks* was positive and significant ( $\beta_6 = 0.293$ ,  $SE = 0.107$ ,  $p < 0.01$ ) and *LogROA* was positive and significant ( $\beta_7 = 0.410$ ,  $SE = 0.062$ ,  $p < 0.001$ ). However, the coefficient of *LogEbitda*  $\beta_9$  (-0.124) was negative and significant ( $SE = 0.017$ ,  $p < 0.001$ ), *LogGoodwill* was negative and significant ( $\beta_{10} = -0.817$ ,  $SE = 0.105$ ,  $p < 0.001$ ) and correspondingly *LogOperatingProfit/Loss* was negative and significant ( $\beta_{12} = -0.123$ ,  $SE = 0.014$ ,  $p < 0.001$ ). Lastly, there was no evidence of within-group and between-group variation in Model 3.

Afterwards, in Model 4 of Table 6.19 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 4A's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = 15.00$ ,  $deviance = -30.01$ ,  $AIC = -0.01$ ,  $p < 0.001$ ). The ensuing results from Model 4 indicated that the test variable outcomes were similar to that of Models 2 and 3. The coefficient of the intercept  $\beta_0$  (11.754) was positive and significant ( $SE = 1.432$ ,  $p < 0.001$ ), the coefficient of *LogBBBEEscorecomposite*  $\beta_1$  (0.881) was positive and significant ( $SE = 0.378$ ,  $p < 0.05$ ) and the coefficient of *LogProfitAfterInterestTax*  $\beta_2$  (0.218) was positive and significant ( $SE = 0.028$ ,  $p < 0.001$ ). Equally, the coefficient of *LogValueTransactions*  $\beta_5$  (0.254) was positive and significant ( $SE = 0.116$ ,  $p < 0.05$ ), the coefficient of *LogPatentsTrademarks*  $\beta_6$  (0.293) was positive and significant ( $SE = 0.107$ ,  $p < 0.01$ ) and the coefficient of *LogROA*  $\beta_7$  (0.410) was positive and significant ( $SE = 0.062$ ,  $p < 0.001$ ). While, the coefficient of *LogEbitda*  $\beta_9$  (-0.124) was negative and significant ( $SE = 0.017$ ,  $p < 0.001$ ), the coefficient of *LogGoodwill*  $\beta_{10}$  (-0.817) was negative and significant ( $SE = 0.105$ ,  $p < 0.001$ ) and the coefficient of *LogOperatingProfit/Loss*  $\beta_{12}$  (-0.123) was negative and significant ( $SE = 0.014$ ,  $p < 0.001$ ). Lastly, there was no evidence of within-group and between-group variation in Model 4.

In Model 5 of Table 6.19 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented with interaction effects. Model 5A estimates suggests that Hypothesis 4A's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 10.94$ ,  $deviance = -21.88$ ,  $AIC = 6.12$ ,  $p < 0.001$ ). However, the fit statistics was less robust when compared to that of Models 2, 3 and 4. Meanwhile, the resultant outcomes from Model 5A showed that the test variable results were comparable to that of Model 2 and 3. The researcher observed that the addition of an interaction variable *LogBBBEE\*ProfitAfterInterestTax* ( $\beta_{13} = 0.090$ ,  $SE = 0.015$ ,  $p < 0.001$ ) which is the interaction effect between the B-BBEE composite score x the total profit after interest and tax of the JSE's AltX listed firms made the significance level of the remaining independent variables to become stronger. This implies that

higher B-BBEE score ratings for the JSE's AltX listed firms can lead to higher PAIT, *ceteris paribus*. Furthermore, the coefficient of the intercept  $\beta_0$  (7.174) was positive and strongly significant ( $SE = 1.333$ ,  $p < 0.001$ ). Surprisingly, the coefficient of the total revenue of the JSE's AltX listed firms (i.e. *LogTurnover*)  $\beta_3$  (1.506) became positive and strongly significant ( $SE = 0.280$ ,  $p < 0.001$ ) with the addition of the interaction variable. More so, the coefficient of *LogROA*  $\beta_7$  (0.333) was positive and significant ( $SE = 0.068$ ,  $p < 0.001$ ). Equally important was the fact that the coefficient of *LogEbitda*  $\beta_9$  (-0.089) remained negative and significant ( $SE = 0.018$ ,  $p < 0.001$ ). Besides, the coefficient of *LogGoodwill*  $\beta_{10}$  (-0.968) was negative and strongly significant ( $SE = 0.129$ ,  $p < 0.001$ ), while the coefficient of *LogOperatingProfit/Loss*  $\beta_{12}$  (-0.132) remained very negatively significant ( $SE = 0.019$ ,  $p < 0.001$ ) in relation to the dependent variable. Lastly, the above model showed that there was no evidence of within-group and between-group variation in Model 5A.

Also, Model 5B's estimates submits that Hypothesis 4A's positive and strongly significant relationship with the outcome variable was further strengthened (*log likelihood* = 14.85, *deviance* = -29.70, *AIC* = -1.70,  $p < 0.001$ ). In fact, the fit statistics became more robust than that of Models 1 and 5A. Meanwhile, the resultant outcomes from Model 5B showed that the test variable results were comparable to that of Models 2, 3, 4 and 5A. The researcher observed that the addition of an interaction variable *LogBBBEE\*Turnover* (which is the interaction effect between the B-BBEE composite score x aggregate turnover of the JSE's AltX listed firms) made the significance level of the remaining independent variables to become more robust. The coefficient of the intercept  $\beta_0$  (12.848) was positive and significant ( $SE = 0.757$ ,  $p < 0.001$ ), the coefficient of *LogProfitAfterInterestTax*  $\beta_2$  (0.220) was positive and significant ( $SE = 0.027$ ,  $p < 0.001$ ), the coefficient of *LogValueTransactions*  $\beta_5$  (0.251) was positive and significant ( $SE = 0.116$ ,  $p < 0.05$ ). Equally, the coefficient of *LogPatentsTrademarks*  $\beta_6$  (0.269) was positive and significant ( $SE = 0.083$ ,  $p < 0.01$ ). Furthermore, the coefficient of *LogROA*  $\beta_7$  (0.413) was positive and significant ( $SE = 0.062$ ,  $p < 0.001$ ), the coefficient of *LogEbitda*  $\beta_9$  (-0.126) was negative and strongly significant ( $SE = 0.016$ ,  $p < 0.001$ ), the coefficient of *LogGoodwill*  $\beta_{10}$  (-0.832) was negative and significant ( $SE = 0.105$ ,  $p < 0.001$ ). While, the coefficient of *LogOperatingProfit/Loss*  $\beta_{12}$  (-0.124) was negative and very significant ( $SE = 0.011$ ,  $p < 0.001$ ). Lastly, the above model showed that there was no evidence of within-group variation in Model 5B.

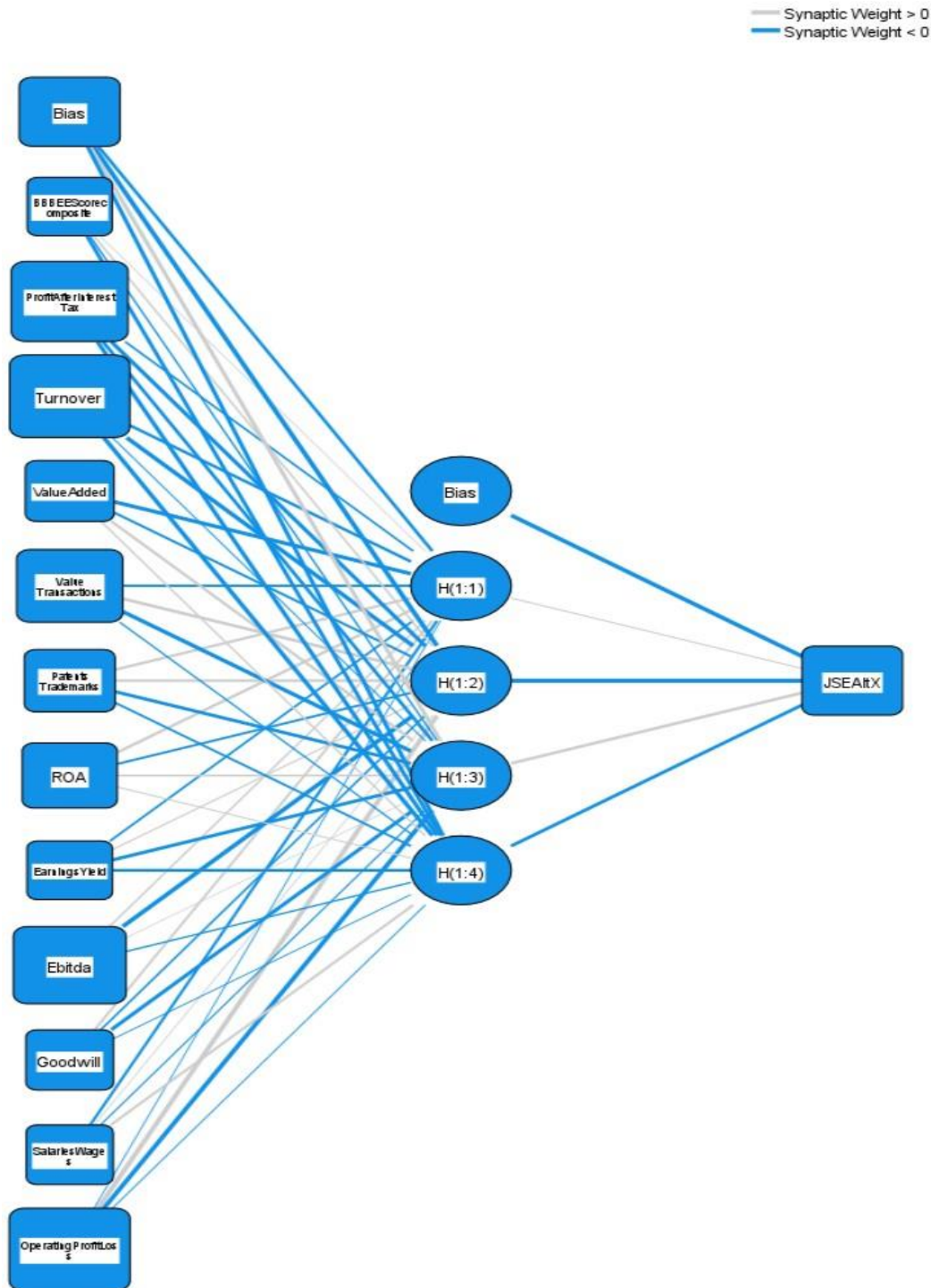
In the same way, Model 5C's estimates reveals that Hypothesis 4A's positive and strongly significant relationship with the outcome variable was further strengthened (*log likelihood* = 14.00, *deviance* = -28.01, *AIC* = -0.01,  $p < 0.001$ ). In fact, the fit statistics was comparable to that of Models 2, 3, 4, 5A and 5B. In addition, the resultant outcomes from Model 5C showed that the test variable

result was analogous to that of Model 2, 3, 4, 5A and 5B. The researcher observed that the addition of an interaction variable  $LogBBEE * SalariesWages$  ( $\beta_{15} = 0.129$ ,  $SE = 0.041$ ,  $p < 0.01$ ) which is the interaction effect between the B-BBEE composite score multiplied by the cumulative salaries and wages of the JSE's AltX listed firms made the significance level of the remaining independent variables to become more robust. The coefficient of the intercept  $\beta_0$  (12.457) was positive and significant ( $SE = 1.693$ ,  $p < 0.001$ ), the coefficient of  $LogProfitAfterInterestTax$   $\beta_2$  (0.217) was positive and significant ( $SE = 0.025$ ,  $p < 0.001$ ), the coefficient of  $LogValueAdded$   $\beta_4$  (-0.360) became negative and significant ( $SE = 0.155$ ,  $p < 0.05$ ). Equally, the coefficient of  $LogValueTransactions$   $\beta_5$  (0.259) was positive and significant ( $SE = 0.118$ ,  $p < 0.05$ ). Furthermore, the coefficient of  $LogPatentsTrademarks$   $\beta_6$  (0.290) was positive and significant ( $SE = 0.111$ ,  $p < 0.05$ ), the coefficient of  $LogROA$   $\beta_7$  (0.402) was positive and strongly significant ( $SE = 0.054$ ,  $p < 0.001$ ), the coefficient of  $LogEbitda$   $\beta_9$  (-0.123) was negative and significant ( $SE = 0.017$ ,  $p < 0.001$ ), the coefficient of  $LogGoodwill$   $\beta_{10}$  (-0.834) was negative and significant ( $SE = 0.111$ ,  $p < 0.001$ ). Likewise, the coefficient of  $LogOperatingProfit/Loss$   $\beta_{12}$  (-0.126) was negative and very significant ( $SE = 0.016$ ,  $p < 0.001$ ). Lastly, the above model showed that there was evidence of within-group variation in Model 5C, however, there was no evidence of between-group variation in Model 5C. This implies that the interaction effect between the B-BBEE score rating of the JSE's AltX listed firms and the salaries and wages of these companies' personnel was strong enough to lead to changes in the performance of these firms. Nevertheless, the increase in the salaries and wages of these firms led to lower value-added potentials (and vice versa), which informs the need for skills development to enhance the productive capacity of these companies.

Similarly, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit to the preceding model (Leckie, 2013). There was no evidence of significant variation between the number of SMMEs in South Africa, and within- SMMEs in South Africa-between- JSE's AltX companies, as well as within- JSE's AltX companies -between-the JSE's AltX indicators (except in Model 1, 2 and 5C). In Model 1, the level 3 variation (i.e. the number of SMMEs in South Africa) can lead to about (i.e.  $\sigma_v^2 \times AltXMarketcap[\text{mean}]$  or  $0.364946 * 17,003,739,907.82$ ) R 6,205,443,464 difference in annual listed firm's performance, ceteris paribus. In Model 2, the level 1 variation (i.e. the JSE's AltX indicators) can lead to about (i.e.  $\sigma_e^2 \times AltXMarketcap[\text{mean}]$  or  $0.010023 * 17,003,739,907.82$ ) R 170,428,485 difference in annual listed firm's performance, ceteris paribus. While, in Model 5C, the level 1 variation (i.e. the JSE's AltX indicators) can lead to about (i.e.

$\sigma_e^2 \times AltXMarketcap[\text{mean}]$  or  $0.009213 * 17,003,739,907.82$ ) R 156,655,456 difference in annual listed firm's performance, ceteris paribus.

### 6.7.12 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 4A SECONDARY DATA

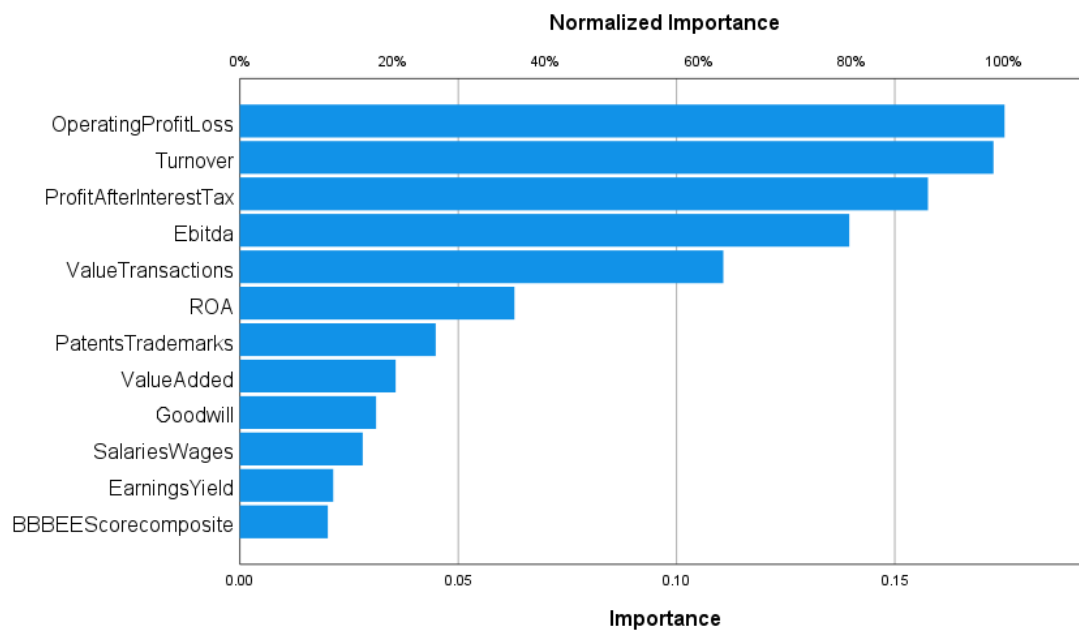


NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.11: Multilayer perceptron network diagram for Hypothesis 4A secondary data (Source: Authors' compilation)**



ANNs was used to predict various Hypothesis 4A secondary data iterations. In Figure 6.11 the multilayer perceptron network for Hypothesis 4A secondary data variables has 4 layers, 1 bias term and 1 output (i.e. *JSEAltX*). More so, in the case processing summary, the sample had  $N = 13$  or 77% (with *relative error* 0.376) *Training* parameters and  $N = 4$  or 24 % (with *relative error* 0.235) *Testing* parameters, which comprised on 17 valid datasets. Also, the hidden layer 1 had a *Bias* output layer of -0.752 (i.e. for *JSEAltX*), H(1:1) had an output layer of 0.097 (i.e. for *JSEAltX*), H(1:2) had an output layer of -1.210 (i.e. for *JSEAltX*), H(1:3) had an output layer of 0.372 (i.e. for *JSEAltX*) and H(1:4) had an output layer of -0.503 (i.e. for *JSEAltX*).



**Figure 6.12: Independent variable importance analysis for Hypothesis 4A secondary data (Source: Authors’ compilation)**

The rich insights provided by the perceptron ANNs ultimately showed (in Figure 6.12) that the independent variables had a normalised ranked importance of 100% for *OperatingProfit/Loss*, 99% for *Turnover*, 90% for *ProfitAfterInterestTax*, 80% for *Ebitda*, 63% for *ValueTransactions*, 36% for *ROA*, 26% for *PatentsTrademarks*, 20% for *ValueAdded*, 18% for *Goodwill*, 16% for *SalariesWages*, 12% for *EarningsYield* and 12% for *BBBEEScorecomposite*. This implies that efforts should be made to gear up the operating profit of these firms through a well-articulated expansion and distribution plan (Bowmaker-Falconer and Herrington, 2020) in order to meet the short-term, medium-term and long-term objectives of listing on the JSE’s AltX, *ceteris paribus*. Besides, the revenue potentials of these companies can be boosted via a realistic streamlining of company’s operations, restructuring and/or re-capitalisation schemes, so as to leverage their operations in a post-COVID-19 era where price and demand destruction is the order of the day.

Similarly, the PAIT figures should be cautiously examined over time, because it could trigger buy and sell decisions on the stock market, *ceteris paribus* (Modigliani and Miller, 1958: 1963; Bukalska, 2019; Agyei, Sun and Abrokwah, 2020).

### 6.7.13 HYPOTHESIS 4B SECONDARY DATA MLM EQUATION

As noted in Chapter 5, the results that were derived from the empirical analysis was conducted via a 3-Level MLM equation estimation command. Models 1, 2, 3, 4 and 5 of Table 6.20 presents the MLM results from the estimation procedure that was implemented to test and measure the veracity of hypothesis 4B (i.e. B-BBEE score impact on the performance of listed firms) with *LogBBBEEscorecomposite* as the dependent variable. This is considered important, despite the fact that the compliance requirement impacted positively on the B-BBEE score rating of the JSE's AltX listed firms. Because in actual sense, the impact of the B-BBEE score rating may or may not be positively linked with registered firm performance over time. Consequently, this informs the researchers' implementation of an additional empirical analysis procedure to shed more light on this phenomenon. Model 1 of Table 6.20 is the null, no predictors or variance component model of the equation. Its intercept  $\beta_0$  randomly vary in accordance with the changing impact of firm listing on the JSE's AltX. Since no predictors were included in the model at Level 1, the intercept is equal to the *LogBBBEEscorecomposite* means for the Level 1 outcome variable. Thus, for every 1 unit increase in the intercept, there is a predicted positive and significant increase/impact on the B-BBEE score rating of the JSE's AltX listed firms by 2.179. This can be further illustrated using the test ( $t$ ) statistic, which is presented as  $t$  (degrees of freedom) =  $t$  statistic,  $p = p$  value.

This implies that ( $M = 2.179$ ,  $SE = 0.122$ ) the B-BBEE score rating of the JSE's AltX listed firms impact on performance is significantly positive at [all] 0.1%, 1% and 5% levels,  $t(17) = 17.821$ ,  $p = 0.000$  (where  $M$  = the estimate mean parameter, and  $SE$  = standard error). Furthermore, based on the aforementioned, the estimates reported in Models 1 to 5 did not indicate substantial evidence of within-group and between-group variances (Heck et al., 2014; Osborne, 2017). In Model 1, the within-group and cluster variance were positive at all levels. However, the within-group and between-group variance of the random intercepts (i.e. variation across groups) were positive but not significant at Level 1, 2 and 3. Consistent with similar studies, the null model's mean estimate is the only parameter indicator considered relevant at this stage of the empirical analysis, but its results can be compared to the succeeding model results (Leckie, 2013). Its reported *log likelihood* was -12.48 with a

deviance statistic of 24.96, while its AIC was 30.96, which makes a lot of sense in the following model analysis.

**Table 6.20 Hypothesis 4B MLM equation for the secondary data**

Parameter	Model 1	Model 2	Model 3	Model 4	Model 5A	Model 5B	Model 5C
$\beta_0$	2.179*** (0.122)	-3.284* (1.255)	-4.054** (1.488)	-4.054** (1.488)	-1.046 (0.803)	-1.137 (0.640)	-0.964 (0.567)
LogJSEAltX		0.182 (0.094)	0.275* (0.118)	0.275* (0.118)			
LogProfitAfterInterestTax		-0.032 (0.027)	-0.051 (0.031)	-0.051 (0.031)		-0.052* (0.021)	-0.068*** (0.008)
LogTurnover		0.606*** (0.149)	0.472** (0.165)	0.472** (0.165)	0.664*** (0.154)		0.529*** (0.112)
LogValueAdded		-1.233*** (0.309)	-1.044** (0.324)	-1.044** (0.324)	-1.442*** (0.320)	-1.091*** (0.272)	-1.099*** (0.145)
LogValueTransactions		-0.122 (0.059)	-0.119 (0.068)	-0.119 (0.068)	-0.065 (0.072)	-0.119 (0.059)	-0.136** (0.050)
LogPatentsTrademarks		-0.162** (0.052)	-0.190** (0.055)	-0.190** (0.055)	-0.144* (0.058)	-0.190*** (0.050)	-0.145** (0.039)
LogROA		-0.060 (0.056)	-0.098 (0.061)	-0.098 (0.061)	0.025 (0.039)	-0.100* (0.042)	-0.140*** (0.018)
LogEarningsYield		-0.023 (0.053)	-0.012 (0.060)	-0.012 (0.060)	-0.076 (0.061)	-0.003 (0.055)	0.005 (0.041)
LogEbitda		0.027 (0.015)	0.034 (0.018)	0.034 (0.018)	-0.001 (0.011)	0.035** (0.013)	0.046*** (0.006)
LogGoodwill		0.177* (0.081)	0.251* (0.110)	0.251* (0.110)	0.028 (0.065)	0.215*** (0.048)	0.238*** (0.051)
LogSalariesWages		1.206*** (0.285)	1.053** (0.299)	1.053** (0.299)	1.430*** (0.290)	1.071*** (0.252)	
LogOperatingProfit/Loss		0.035** (0.012)	0.046** (0.015)	0.046** (0.015)	0.016 (0.008)	0.045*** (0.010)	0.046*** (0.005)
LogJSEAltX*ProfitAfterInterestTax					0.001 (0.002)		
LogJSEAltX*Turnover						0.049*** (0.008)	
LogJSEAltX*SalariesWages							0.089*** (0.010)
$\sigma_e^2$	0.127 (0.087)	0.000 (0.000)	0.000 (0.001)	0.000 (0.001)	0.002 (0.001)	0.003** (0.001)	0.002** (0.001)
$\sigma_v^2$	0.243 (0.000)		0.003 (0.000)	0.000 (0.000)			
$\sigma_u^2$	3.38e-63 (0.000)	0.003** (0.001)	0.000 (0.000)	0.000 (0.000)			
$\sigma_v^2 \times \sigma_u^2$				0.003 (0.000)	0.002 (0.000)	0.000 (0.000)	0.000 (0.000)
Log-likelihood	-12.48	38.97	24.89	24.89	22.64	26.22	29.60
Deviance	24.96	-77.94	-49.78	-49.78	-45.29	-52.43	-59.20
AIC	30.96	-47.94	-19.78	-19.78	-17.29	-24.43	-31.20
Fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes
Random effects	No	Yes	Yes	Yes	Yes	Yes	Yes

$N = 17$ ,  $\beta_0$  Intercept,  $\sigma_e^2$  the level one variance i.e. JSE's AltX indicators,  $\sigma_u^2$  the level two variance i.e. JSE's AltX companies,  $\sigma_v^2$  the level three variance i.e. SMMEs in South Africa, AIC Akaike's Information Criterion *LogJSEAltX\*ProfitAfterInterestTax* is the interaction effect between the impact of market capitalisation and the number of the JSE's AltX listed companies x the total profit after interest and tax of the JSE's AltX listed firms, *LogJSEAltX\*Turnover* is the interaction effect between the impact of market capitalisation and the number of the JSE's AltX listed companies x aggregate turnover of the JSE's AltX listed firms, *LogJSEAltX\*SalariesWages* is the interaction effect between the impact of market capitalisation and the number of the JSE's AltX listed companies x the cumulative salaries and wages of the JSE's AltX listed firms. Estimates of all the parameters were reported, while the standard errors were reported in parentheses. Parameter estimates in italics were calculated manually due to redundancy issues. \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Next, Model 2 of Table 6.20 comprised of a 2-level model with fixed level 1 and 2 predictors, and randomly varying intercepts. The empirical statistical tests conducted revealed that the overall model is significant ( $\log likelihood = 38.97$ ,  $deviance = -77.94$ ,  $AIC = -47.94$ ,  $p < 0.001$ ). Hence, the results from Hypothesis 4B tests indicated that higher B-BBEE score ratings of the JSE's AltX listed firms can lead to improvements in company performance, and vice versa. This is consistent with findings from similar studies (Mashaba, 2014; Van der Merwe and Ferreira, 2014; Heerden, 2015; Mzilikazi, 2015; Ungerer, Gerber and Volschenk, 2015). More so, this also showed that Model 2 was more robust than the PLUM ordinal regression procedure that was carried out in chapter 5 to check and test for clustering in the survey data. Obviously, this is evidenced by a reduced *deviance* statistic of -77.94 against 89.738 and 24.96 in Model 1. Likewise, the intercept of the MLM equation  $\beta_0$  has a non-random constant value estimate or coefficient of -3.284 ( $SE = 1.255$ ,  $p < 0.05$ ). This means the coefficient of the equation has a negative direct relationship with the explained variable. And for every unit increase in the intercept coefficient, there is a predicted decrease of -3.284 in the B-BBEE score rating of the JSE's AltX listed firms. That said, as expected the total revenue of the JSE's AltX listed firms had a positive relationship with the B-BBEE score rating of these firms, since the coefficient  $\beta_3$  (0.606) of *LogTurnover* was positive and strongly significant ( $SE = 0.149$ ,  $p < 0.001$ ). However, the value adding potential of the JSE's AltX listed firms (*LogValueAdded*) had a negative and significant effect on the B-BBEE score rating of these firms ( $\beta_4 = -1.233$ ,  $SE = 0.309$ ,  $p < 0.001$ ). Apparently, this is due to the fact that the lure of preferential procurement by the government could lead to low level of raw material transformation and quality standards (Mlonzi et al., 2010; Mzilikazi, 2015; Harvey, 2016; Mehta and Ward, 2017; Pike, Puchert and Chinyamurindi, 2018).

Furthermore, unexpectedly, the value of patents and trademarks of the JSE's AltX listed firms was negatively linked with the B-BBEE score rating of these firms. Consequently, any 1-unit increase in the coefficient of *LogPatentsTrademarks* ( $\beta_6$ ) would lead to a -0.162 times negative impact on the B-BBEE score rating of these firms ( $SE = 0.052$ ,  $p < 0.01$ ). Predictably, the *Goodwill* proxy variable measuring the impact that firm listing brings to the balance sheet (based on the brand name and reputation of these companies) became positive and significantly associated with the B-BBEE score rating of these firms ( $\beta_{10} = 0.177$ ,  $SE = 0.081$ ,  $p < 0.05$ ). This is probably linked with the ANC government's agenda for businesses to become socially responsible, as they make a difference in the redistribution of wealth in South Africa. But there needs to be a caveat, since investors who base their judgement on pure economic logic might not place much premium on the social responsibility contribution of these firms, unlike the government and the majority of the poor and black segment of the population who might do so. Besides, the salaries

and wages paid by these firms was associated with their B-BBEE score rating. Hence, a 1-unit increase in the coefficient of *LogSalariesWages* ( $\beta_{11}$ ) would lead to a 1.206 times positive impact on the B-BBEE score rating of SMEs that are listed on the JSE's AltX ( $SE = 0.285$ ,  $p < 0.001$ ). Predictably, the total operating profit and loss of the JSE's AltX listed firms (i.e. *LogOperatingProfit/Loss*) was also positive and significantly related to the B-BBEE score rating of these firms ( $\beta_{12} = 0.035$ ,  $SE = 0.012$ ,  $p < 0.01$ ). More so, unlike the previous models, there was no evidence of within-group variation in Model 2. However, there was evidence of between-group variation in Level 2 (i.e. the number of JSE's AltX companies).

Subsequently, in Model 3 of Table 6.20 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercept was implemented. The results were identical to the outcomes that were derived from Model 2. Correspondingly, Hypothesis 4B was fully supported ( $\log likelihood = 24.89$ ,  $deviance = -49.78$ ,  $AIC = -19.78$ ,  $p < 0.001$ ). The coefficient of the intercept  $\beta_0$  (-4.054) was negative and significant ( $SE = 1.488$ ,  $p < 0.01$ ), while, the coefficient of the *LogJSEAltX*  $\beta_1$  (0.275) was positive and significant ( $SE = 0.118$ ,  $p < 0.05$ ). This implies that the number of JSE's AltX listed companies and their market capitalisation impacts positively on the B-BBEE score rating of these firms. More so, the coefficient of *LogTurnover*  $\beta_3$  (0.472) was positive and significant ( $SE = 0.165$ ,  $p < 0.01$ ). On the other hand, the coefficient of *LogValueAdded*  $\beta_4$  (-1.044) was negative and significant ( $SE = 0.324$ ,  $p < 0.01$ ). Similarly, *LogPatentsTrademarks* was negative and significant ( $\beta_6 = -0.190$ ,  $SE = 0.055$ ,  $p < 0.01$ ). Equally, *LogGoodwill* was positive and significant ( $\beta_{10} = 0.251$ ,  $SE = 0.110$ ,  $p < 0.05$ ), *LogSalariesWages* was positive and significant ( $\beta_{11} = 1.053$ ,  $SE = 0.299$ ,  $p < 0.01$ ) and correspondingly *LogOperatingProfit/Loss* was positive and significant ( $\beta_{12} = 0.046$ ,  $SE = 0.015$ ,  $p < 0.01$ ). Lastly, there was no evidence of within-group and between-group variation in Model 3.

Afterwards, in Model 4 of Table 6.20 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented using the build nested terms command. The estimates suggests that Hypothesis 4B's positive and significant relationship with the response variable was further reinforced ( $\log likelihood = 24.89$ ,  $deviance = -49.78$ ,  $AIC = -19.78$ ,  $p < 0.001$ ). Noticeably, the goodness of fit *deviance* statistic was equal to that of Model 3. The ensuing results from Model 4 indicated that the test variable outcomes were identical to that of Model 3. The coefficient of the intercept  $\beta_0$  (-4.054) was negative and significant ( $SE = 1.488$ ,  $p < 0.01$ ). Equally, the coefficient of *LogJSEAltX*  $\beta_1$  (0.275) was positive and significant ( $SE = 0.118$ ,  $p < 0.05$ ), the coefficient of *LogTurnover*  $\beta_3$  (0.472) was positive and significant ( $SE = 0.165$ ,  $p < 0.01$ ), while the coefficient of *LogValueAdded*  $\beta_4$  (-1.044) was negative and

significant ( $SE = 0.324$ ,  $p < 0.01$ ) and the coefficient of *LogPatentsTrademarks* was also negative and significant ( $\beta_6 = -0.190$ ,  $SE = 0.055$ ,  $p < 0.01$ ). Correspondingly, *LogGoodwill* was positive and significant ( $\beta_{10} = 0.251$ ,  $SE = 0.110$ ,  $p < 0.05$ ), *LogSalariesWages* was positive and significant ( $\beta_{11} = 1.053$ ,  $SE = 0.299$ ,  $p < 0.01$ ) and also *LogOperatingProfit/Loss* was positive and significant ( $\beta_{12} = 0.046$ ,  $SE = 0.015$ ,  $p < 0.01$ ). Similarly, there was no evidence of within-group and between-group variation in Model 4.

In Model 5 of Table 6.20 a 3-level model with fixed level 1, 2 and 3 predictors, and randomly varying intercepts and slopes was implemented with interaction effects. Model 5A estimates suggests that Hypothesis 4B's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log \text{likelihood} = 22.64$ ,  $\text{deviance} = -45.29$ ,  $AIC = -17.29$ ,  $p < 0.001$ ). Meanwhile, the resultant outcomes from Model 5A showed that the test variable results were comparable to that of Model 2, 3 and 4. The researcher observed that the addition of an interaction variable *LogJSEAltX\*ProfitAfterInterestTax* (which is the interaction effect between the impact of market capitalisation and the number of the JSE's AltX listed companies multiplied by the total profit after interest and tax of the JSE's AltX listed firms) made the significance level of the remaining independent variables to a little bit stronger. The coefficient of *LogTurnover*  $\beta_3$  (0.664) was positive and significant ( $SE = 0.154$ ,  $p < 0.001$ ), while the coefficient of *LogValueAdded*  $\beta_4$  (-1.442) was negative and significant ( $SE = 0.320$ ,  $p < 0.001$ ). Equally, the coefficient of *LogPatentsTrademarks*  $\beta_6$  (-0.144) was negative and significant ( $SE = 0.058$ ,  $p < 0.05$ ). Correspondingly, the coefficient of *LogSalariesWages*  $\beta_{11}$  (1.430) was positive and significant ( $SE = 0.290$ ,  $p < 0.001$ ). Lastly, the above model showed that there was no evidence of within-group and between-group variation in Model 5A.

Also, Model 5B's estimates submits that Hypothesis 4B's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log \text{likelihood} = 26.22$ ,  $\text{deviance} = -52.43$ ,  $AIC = -24.43$ ,  $p < 0.001$ ). In fact, the fit statistics was more robust than that of Model 5A. Meanwhile, the resultant outcomes from Model 5B showed that the test variable results were comparable to that of Model 2, 3 and 5A. The researcher observed that the addition of an interaction variable *LogJSEAltX\*Turnover* (which is the interaction effect between the impact of market capitalisation and the number of the JSE's AltX listed companies multiplied by the aggregate turnover of the JSE's AltX listed firms) was positive and significant ( $\beta_{14} = 0.049$ ,  $SE = 0.008$ ,  $p < 0.001$ ). This also made the significance level of the remaining independent variables to become more robust. Furthermore, the coefficient of *LogProfitAfterInterestTax*  $\beta_2$  (-0.052) became negative and significant ( $SE = 0.021$ ,  $p < 0.05$ ), the coefficient of *LogValueAdded*  $\beta_4$  (-1.091) was negative and significant ( $SE =$

0.272,  $p < 0.001$ ), the coefficient of *LogPatentsTrademarks*  $\beta_6$  (-0.190) was negative and significant ( $SE = 0.050$ ,  $p < 0.001$ ). Equally, the coefficient of *LogROA*  $\beta_7$  (-0.100) became negative and significant ( $SE = 0.042$ ,  $p < 0.05$ ) indicating that the interaction effect caused the return on assets of the JSE's AltX listed firms to worsen as the B-BBEE score rating of these firms improve. Besides, the coefficient of *LogEbitda*  $\beta_9$  (0.035) became positive and significant ( $SE = 0.013$ ,  $p < 0.01$ ) indicating that the impact of the preferential procurement schemes when these firms turn out to be B-BBEE compliant was noteworthy. Likewise, the coefficient of *LogGoodwill*  $\beta_{10}$  (0.215) was positive and strongly significant ( $SE = 0.048$ ,  $p < 0.001$ ), the coefficient of *LogSalariesWages*  $\beta_{11}$  (1.071) was positive and significant ( $SE = 0.252$ ,  $p < 0.001$ ). Correspondingly, the coefficient of *LogOperatingProfit/Loss*  $\beta_{12}$  (0.045) was positive and strongly significant ( $SE = 0.010$ ,  $p < 0.001$ ). Lastly, the above model showed that there was evidence of within-group in Level 1. However, there was no evidence of between-group variation in Model 5B.

In the same way, Model 5C's estimates reveals that Hypothesis 4B's positive and strongly significant relationship with the outcome variable was further strengthened ( $\log likelihood = 29.60$ ,  $deviance = -59.20$ ,  $AIC = -31.20$ ,  $p < 0.001$ ). In fact, the fit statistics was smaller when compared to that of Model 1, 3, 4, 5A and 5B. Meanwhile, the resultant outcomes from Model 5C showed that the test variable result was comparable to that of Model 2, 3, 4, 5A and 5B. The researcher observed that the addition of an interaction variable *LogJSEAltX\*SalariesWages* ( $\beta_{15} = 0.089$ ,  $SE = 0.010$ ,  $p < 0.001$ ) which is the interaction effect between the impact of market capitalisation and the number of the JSE's AltX listed companies multiplied by the cumulative salaries and wages of the JSE's AltX listed firms made the significance level of the remaining independent variables to become more robust. Besides, the coefficient of *LogProfitAfterInterestTax*  $\beta_2$  (-0.068) became negative and significant ( $SE = 0.008$ ,  $p < 0.001$ ), while, the coefficient of *LogTurnover*  $\beta_3$  (0.529) remained positive and significant ( $SE = 0.112$ ,  $p < 0.001$ ). Equally, the coefficient of *LogValueAdded*  $\beta_4$  (-1.099) was negative and significant ( $SE = 0.145$ ,  $p < 0.001$ ). Furthermore, the coefficient of *LogValueTransactions*  $\beta_5$  (-0.136) became negative and significant ( $SE = 0.050$ ,  $p < 0.01$ ), indicating an inverse relationship with the B-BBEE score rating of the JSE's AltX listed firms. Similarly, the coefficient of *LogPatentsTrademarks*  $\beta_6$  (-0.145) was negative and significant ( $SE = 0.039$ ,  $p < 0.01$ ), and also, the coefficient of *LogROA*  $\beta_7$  (-0.140) was negative and significant ( $SE = 0.018$ ,  $p < 0.001$ ). On the contrary, the coefficient of *LogEbitda*  $\beta_9$  (0.046) was positive and significant ( $SE = 0.006$ ,  $p < 0.001$ ), the coefficient of *LogGoodwill*  $\beta_{10}$  (0.238) was positive and strongly significant ( $SE = 0.051$ ,  $p < 0.001$ ), just as the coefficient of *LogOperatingProfit/Loss*  $\beta_{12}$  (0.046) was also positive and very significant ( $SE = 0.005$ ,  $p < 0.05$ ). Lastly, the above model showed that there was evidence of

within-group variation in Model 5C. However, there was no evidence of between-group variation in Model 5C.

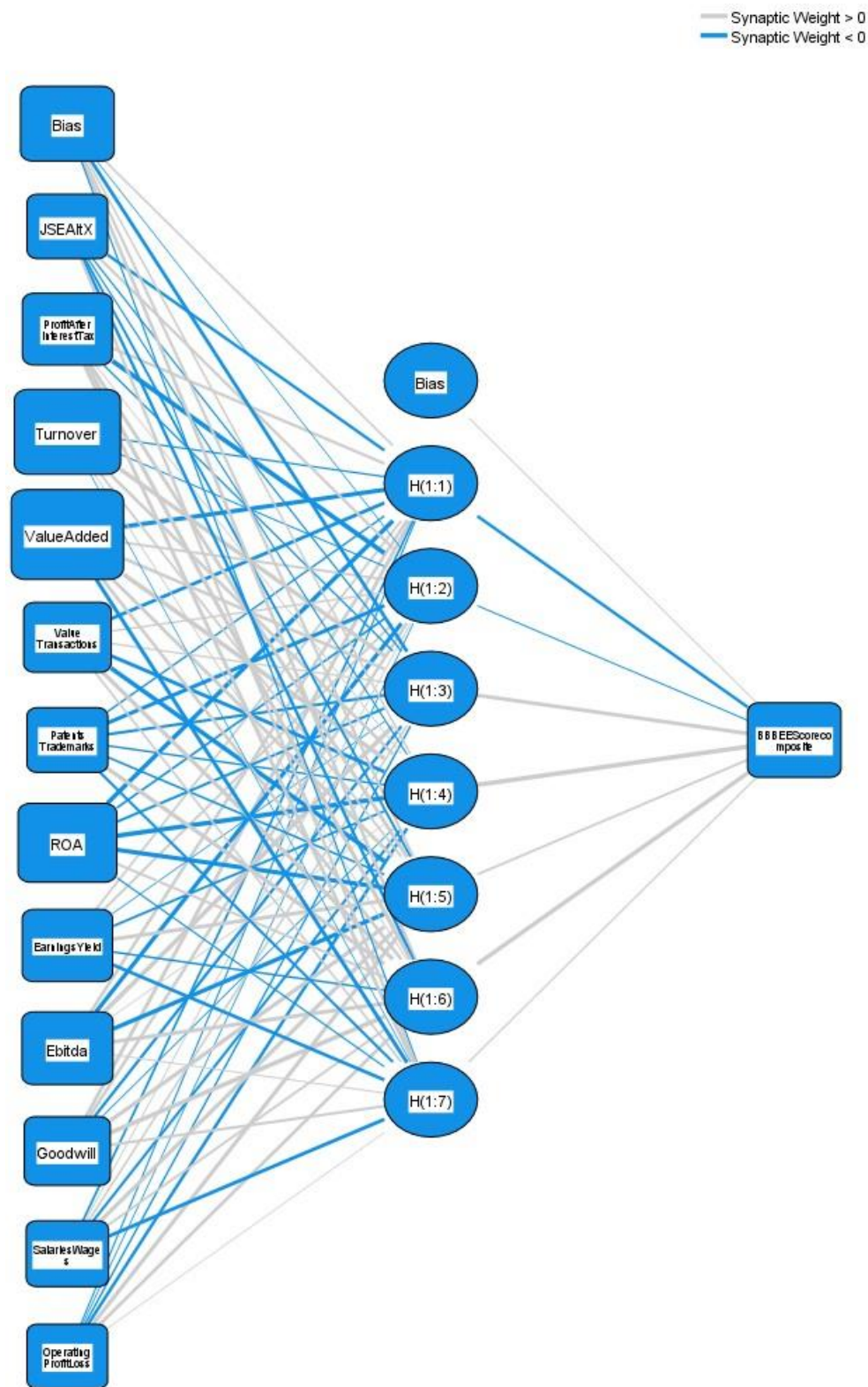
In addition, the LR test statistic which is interpreted as the reduction in deviance (i.e. badness of fit) from the simpler model to the more complex model shows that the succeeding models were a better fit when compared to the null model and the PLUM regression (Leckie, 2013). Model 2 was the most robust of all models followed by Model 5C, 5B, 4, 3, 5A and 1 respectively. There was no evidence of significant variation between the number of SMMEs in South Africa, and within- SMMEs in South Africa-between- JSE's AltX companies, as well as within- JSE's AltX companies -between-the JSE's AltX indicators (except in Model 2, 5B and 5C). In Model 2, the level 2 variation (i.e. the number of JSE's AltX companies) can lead to about (i.e.  $\sigma_u^2 \times AltXMarketcap[mean]$  or  $0.002719 * 17,003,739,907.82$ ) R 46,233,169 difference in annual listed firm's performance, ceteris paribus. Correspondingly, in Model 5B, the level 1 variation (i.e. the JSE's AltX indicators) can lead to about (i.e.  $\sigma_e^2 \times AltXMarketcap[mean]$  or  $0.002639 * 17,003,739,907.82$ ) R 44,872,870 difference in annual listed firm's performance, ceteris paribus. While, in Model 5C, the level 1 variation (i.e. the JSE's AltX indicators) can lead to about (i.e.  $\sigma_e^2 \times AltXMarketcap[mean]$  or  $0.001777 * 17,003,739,907.82$ ) R 30,215,646 difference in annual listed firm's performance, ceteris paribus. In conclusion, it is quite clear that the impact of the JSE's AltX compliance requirements on the B-BBEE score performance of listed firms was positive and significant. However, the impact of the B-BBEE score rating on relevant macroeconomic variables was mixed (only the turnover, PAIT, Ebitda, goodwill, salaries and wages, and the operating profit and loss variables were positive and significantly related to the B-BBEE). This informs the researcher's conclusive arguments and recommendations in the closing chapter of this study.

#### 6.7.14 NEURAL NETWORKS PREDICTION FOR HYPOTHESIS 4B SECONDARY DATA

ANNs was used to predict various Hypothesis 4B secondary data iterations. In Figure 6.13 the multilayer perceptron network for Hypothesis 4B secondary data variables has 7 layers, 1 bias term and 1 output (i.e. *BBBEEScorecomposite*). More so, in the case processing summary, the sample had  $N = 13$  or 77% (with *relative error* 0.083) *Training* parameters and  $N = 4$  or 24 % (with *relative error* 0.046) *Testing* parameters, which comprised on 17 valid datasets. Also, the *BBBEEScorecomposite* predicted hidden layer 1 had a *Bias* output layer of 0.051. While, the *BBBEEScorecomposite* predicted output layer had the following parameter estimates:  $H(1:1) = -0.259$ ,  $H(1:2) = -$

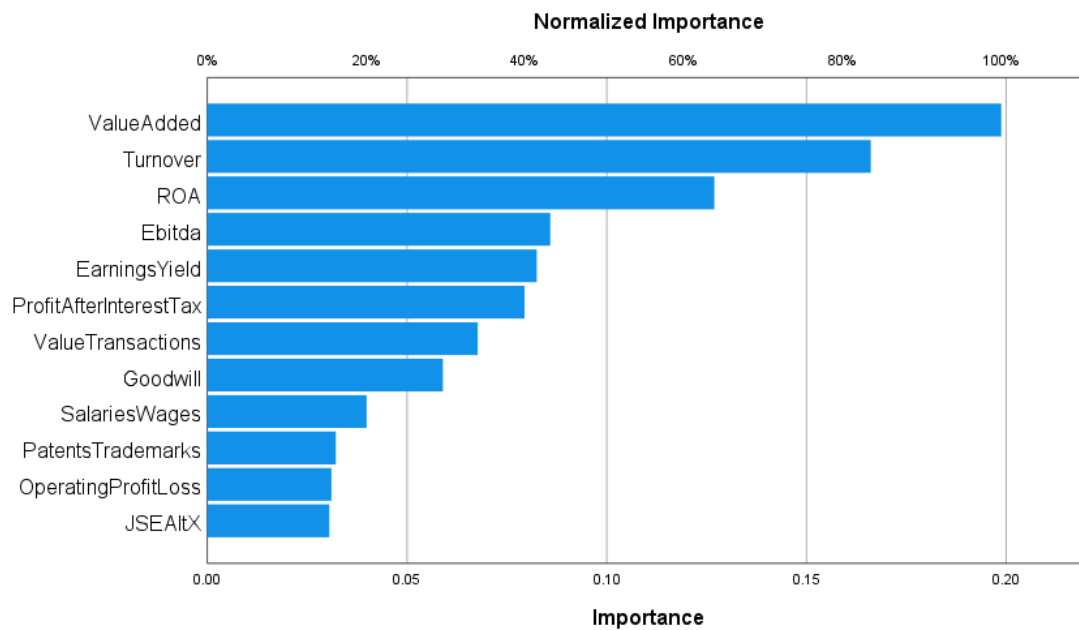


0.055,  $H(1:3) = 0.367$ ,  $H(1:4) = 0.521$ ,  $H(1:5) = 0.201$ ,  $H(1:6) = 0.450$  and  $H(1:7) = 0.106$ .



NB: Hidden layer activation function: Hyperbolic tangent. Output layer activation function: Identity.

**Figure 6.13: Multilayer perceptron network diagram for Hypothesis 4B secondary data (Source: Authors' compilation)**



**Figure 6.14: Independent variable importance analysis for Hypothesis 4B secondary data (Source: Authors' compilation)**

The rich insights provided by the perceptron ANNs ultimately showed (in Figure 6.14) that the independent variables had a normalised ranked importance of 100% for *ValueAdded*, 84% for *Turnover*, 64% for *ROA*, 43% for *Ebitda*, 42% for *EarningsYield*, 40% for *ProfitAfterInterestTax*, 34% for *ValueTransactions*, 30% for *Goodwill*, 20% for *SalariesWages*, 16% for *PatentsTrademarks*, 16% for *OperatingProfit/Loss* and 15% for *JSEAltX*. This implies that the JSE's AltX listed firms should ensure that their products and services have a high value adding benefit. This is because most of these companies export their goods and services to either neighbouring SADC countries (from where they would expand across the continent before branching out) or to European, Australian and American markets. Relatedly, the focus on meeting the requirement for local tenders should be carried out side-by-side with the international orientation of these firms in order to meet their short-term, medium-term and long-term objectives of listing on the JSE's AltX, *ceteris paribus*. Besides, efforts should be made to rapidly boost the revenue potentials, as well as the profitability of these firms. So that their profitability, liquidity, leverage, efficiency and market value ratios would be attractive to both local and international investors, shareholders, lenders, as well as other relevant stakeholders.

## 6.8 QUALITATIVE ANALYSIS AND RESULTS

As mentioned in the preceding chapter, pragmatism research philosophy was adopted in this study, consequently, this section presents the qualitative analysis and results, so as to synergistically reinforce the findings from the quantitative empirical analysis that was carried out in the following section.

More so, ten (10) semi-structured interviews and one (1) pilot interview study were conducted, in order to bring out a rich and thick perspective of the findings in the quantitative section of this study. Due to the nature of this type of research, which is quite different from the quantitative analysis, the researcher had to build trust with the interviewees in the absence of environmental conditioning, the effects of posture, gesture and tone that occurs in a face-to-face interview. Using Zoom online meeting for the study however came with some advantages like evading the COVID-19 restrictions, saving cost, as well as being time friendly. The expectation was that the selected JSE's AltX CEOs, directors and TMT members can see, hear and feel or argue about their experiences constructively with respect to the impact that the lower bourse has on registered firms' performance and entrepreneurship in South Africa, *ceteris paribus*. Furthermore, the interviews were conducted and recorded online real-time on the researcher's mobile phone and laptop. Later on, the researcher deftly transcribed, organised edited, coded and analysed the data thereafter.

The transcription of data took place over a four (4) month period, taking on average between 5-8 hours for word for word transcription putting in perspectives meanings and context, as well as the field notes (for those who objected against the recording of the interview) and all the external information obtained from their company websites. The end result was a transcript size ranging from between 5 to 8 pages per interviewee. In addition, the researcher had to double check (in a time consuming and tedious process) the interview scripts checking for either errors or inconsistencies in order to aid comprehension. According to Senik (2010) it is the qualitative researcher (not the data, method or computer) that has the onerous responsibility to make analytical decisions via meticulous documentation and clue recognition in this kind of research. Interestingly, the key findings are reported under four main sections based on the strengths, weaknesses, opportunities and threats of the JSE's AltX, integrating all the respondents' type-in comments in Part VI of the survey questionnaire with the transcribed interview details. Thus, the report would focus on the merit and demerits of listing on the JSE's AltX, as well as point out the prospects and risks that are associated with registering on a stock exchange. It is expected that the informed opinion of the JSE's AltX listed companies' CEOs/directors/TMT members is vital and would assist in exposing issues that are not adequately covered in the survey questionnaire, as well as the secondary data analysis section of this study.

Primarily, as a rule of thumb, the demographic characteristics/general information of the interviewees was elicited in Part I of the semi-structured interview protocol. Following the ethical considerations of this study, the confidentiality of the interviewees and their companies were protected through the use of codes to represent each of the informant's opinion. This guaranteed

the anonymity of the interview participants. Accordingly, the interviewees were coded as Case *Aaa*, Case *Bbb*, Case *Ccc*, Case *Ddd*, Case *Eee*, Case *Vvv*, Case *Www*, Case *Xxx*, Case *Yyy* and Case *Zzz*. While the pilot interview study was coded as Pilot case. Table 6.21 presents the demographic characteristics as well as the general information of the interviewees. The interview participants comprised of five (4) white males, four (4) black males and two (2) Indian males who were the JSE's AltX listed firm's CEO/directors/TMT members, while the pilot case interviewee was a white male professional with proven track record and experience in the establishment of the AltX with management experience in banking, consulting and entrepreneurship. Furthermore, Case *Aaa* had almost two (2) decades of experience as managing director and CEO of a technology and telecommunications in the highly specialised radio frequency technology niche. The researcher chose him as a key informant because he managed a highly profitable AltX listed company for about two (2) decades with consummate international market experience selling their products to over 70 countries using a sizeable workforce. According to him: "[I am a] *founder member* [of this company], [there were] 3 of us, I was *one of them*, [company xxx] *entered* [in current format] *in 1997*", demonstrating his competence/intuition.

Likewise, Case *Bbb* was selected to participate in the semi-structured case study because he is a technology TMT executive with over 20 years cognate experience in the field of cyber security selling software in about 50 countries. Apart from being a chief digital officer (CDO) of a JSE's AltX listed entity, he was also a CEO of a major subsidiary of the company after their merger and integration into the group with about 300 employees. Similarly, Case *Ccc* was selected to participate in the study because of his experience as a lawyer, tax practitioner and company secretary of a JSE's AltX listed entity. In addition, he has been a C-suite executive for many decades, and even acts as a CEO of the main subsidiary of the listed entity with operations in the UK. On the contrary, because business is not only about good financial performance, the researcher also wanted to get in-depth understandings from a listed entity TMT member (Case *Ddd*) who encountered serious issues on the AltX. Consequently, it was necessary to gain rich insights from a chartered accountant who oversaw the boom and bust (i.e. business rescue and liquidation) of the only low cost airline to list on the JSE's AltX. It is envisaged that lessons can be learnt from the ordeal of the company. Moreover, Case *Eee* was interrogated in order to shed more light about the impact of listing on the industrial engineering sector. Since the interviewee worked as a group finance manager in the entity (participating in board meetings) with operations spanning across Africa and Europe, it is envisaged that he would therefore be able to give a balanced opinion about the phenomenon. This what he had to say about his company's experience in the international markets:

**Table 6.21 Demographic characteristics / general information of the interviewees**

Interviewee/ Question	Case <i>Aaa</i>	Case <i>Bbb</i>	Case <i>Ccc</i>	Case <i>Ddd</i>	Case <i>Eee</i>	Case <i>Vvv</i>	Case <i>Www</i>	Case <i>Xxx</i>	Case <i>Yyy</i>	Case <i>Zzz</i>	Pilot Case
Race	White	White	White	Black	Indian	Black	Black	White	Black	Indian	White
Year of inception	1997	2006	1995	2003	1998	2017	1972	2005	1996	1997	1886
Position	CEO	CEO/ CDO	CEO/ Company Secretary	Chartered Accountant	Group Finance Manager	Group Financial Accountant	Sales Business Development Consultant	CFO	Manager Collection Channel	Group Financial Executive	CMO
Educational level	MSc Electrical Engineering	B.Eng Electronics	PGD Taxation LLB, BA	AP Taxation CA (SA) B.Com	CGMA CA (SA) B.Com	CA (SA) B.Com	Master of Mgt PGD Risk Mgt B.Com Honours	CA (SA) CTA B.Com	BSc HND	PGC Accountancy CIMA, CIS	AC Law MBA PGD in Mgt
Area of operation	Radio Frequency Technology	Digital Technology/ Cyber Security	Financial Services Provider	Low Cost Airline	Industrial Engineering	Clean Energy	Human Capital Solutions	Hotels Holding REIT	Microfinance Fintech	Supplier of Affordable Homes	Financial Services
Work abroad	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
No. of employees	150	300	100	422	120	10	35,000	50	1,837	1,000	500
Overseas market	70 Countries	50 Countries	UK	Tanzania Zambia Zimbabwe	3 in Africa 2 in Europe	No	7 African Countries	No	12 African Countries	No	No
Mode (excluding export)	Acquisition of Subsidiaries	Resellers	Acquisition	Acquisition	JV Acquisition	No	Acquisition	Acquisitions	Acquisitions	Acquisitions	Acquisitions
Foreign listing	No	No	No	No	No	No	No	No	No	No	No

*“Yes, so a lot of what we manufacture would either go into the rest of Africa, and then a large portion of our customers would either be [company xxx] or [company yyy], and those are French companies, they would purchase locally or may be export to Europe; France, Belgium, a few of those areas. It is of course cheaper to manufacture in South Africa with the cost of labour and materials. And then of course in Europe, they would use our standards and engineering quality, [which] could match up with those in Europe, and of course our costs of manufacturing production was cheaper in South Africa”.*

In the same vein, Case Vvv was selected to participate in the interview because he can proficiently unpack issues pertaining to the impact of firm listing on the JSE’s AltX, especially for the reason that he was a group financial accountant for a listed SPAC operating in the clean energy sector. Correspondingly, Case Www was selected because of his excellent academic standing and experience as a sales business development consultant in a JSE’s AltX listed company operating in the manpower development and/or human capital solutions sector. His company had footprints in 7 African countries with about 35,000 staff. Equally, Case Xxx was chosen based on his working experience as the CFO of a listed Hotel REIT with considerable success in the use of firm acquisition and branding as an expansionary tool. Besides, the researcher decided to pick a foreign manager, collections and channels of a JSE’s AltX listed microfinance fintech operating in 12 African countries (i.e. Case Yyy) to divulge the impact of firm listing on their international operations and acquisitions. His neutrality was considered significant in baring facts that might be considered company secrets locally. This is demonstrated in his opinion below:

*“... I may not know much about the dynamics in South Africa, but I can give some assumptions about the improvement in terms of entrepreneurship, what I can say is that you know once that is [listing is] done, it increases the loan threshold, I mean the loan amount that business people can access. In most cases, if you are a business person and you don’t have the capital and you do not have the funds, it actually restricts you from achieving or going into very large or capital-intensive markets or businesses. That said, it increases the loan amount for whoever want to apply for loan, particularly if they have [ehn] the means of taking the affordability and all that. Once there is an increase in the loan amount, people are able to access huge loans to go into their businesses and [also to] expand their businesses...”*

Also, the group financial executive of a listed supplier of affordable homes (i.e. Case Zzz) was selected based on his knowledge and vast experience in this area. This was his opinion about the company and its area of operations:

*“[The company] had several subsidiary companies. It was involved in finance business partnering with the subsidiary[ies], as well as holding companies with board level experience. The company grew very quickly and when it [got] listed it was oversubscribed. There was a lot of cash flow, pre-2008 financial crunch. I had a lot of opportunities to get involved in the operations side from a finance*

*perspective – managing accountant perspective, and all the way up to board level as well... [The company's area of operations was] affordable housing [i.e. property development and the backward integration into civil engineering, architecture etcetera]. It started up as a property developer and the Group structure expanded to civil engineering company that will take up a role and establish a township, and then get all the approvals and whatever, not taking a piece of land, but essentially hectares and hectares of lands that didn't have any services. The civil company instituted the services for the township, the architectural side develop the plans, and then we had a project management side that kind of did the building, the developer was essentially the sales arm, where they had [you know] it was overseeing projects management in terms of individual house delivery, selling on vetting clients, submitting client's application for bond approval etcetera. We also had an insurance arm that will provide insurance in mortgages for our clients, but it had really grown quickly into an end-to-end solution, all the way from procuring raw land to servicing the land, to selling the land, to developing it."*

Lastly, the pilot case interviewee was selected based on his prior experience as the senior general manager and chief marketing officer (CMO) of a foremost financial services company and exchange in South Africa. His over 20 years' directorship and C-suite experience in the financial services, mining, consulting and entrepreneurship sector made him a suitable choice, especially considering the fact that he helped to establish the JSE's AltX. He gave this long, witty and relevant narration about his motivation to form the JSE's AltX:

*"So, the JSE had the Bench Capital and the Development Capital Market [DCM], which were launched in 1986-1989. They had the markets for a very long time. The problem was that they never gave attention to the VCM [i.e. Venture Capital Markets] or the DCM. So, they were established and were kind of always treated as a [the] level below the Main Board. They could not meet the Main Board requirement, so they had to go to the VCM because it costs much less. So, when I joined, I kind of thought that we gonna do something for the SME in SA to assist companies in South Africa. Access to capital is one of the main aims, and sources of consternation in a small to medium company, and the JSE was never a go to venue to raise capital for a number of reasons including the perception that you have to be large, the cost of raising the capital and the cost of remaining on the JSE, the governance required to remain listed, the impact on processes and procedures. And nobody also said maybe it might be worthwhile to list, it's going to explore it. The problem was the JSE, at times... you phone up the JSE and you say, I would like to list, and then they will say, if you don't meet our criteria, we are not even gonna talk to you. In actual fact, we can't talk to you, talk to a corporate finance adviser. I said [that] we need to change all that, we need to be able to go and talk to small and medium sized companies about the benefits of listing for that company. You know that the benefits of listing are unique for each company, you know it is very difficult to sell the benefits as a generic... for one company is completely different, until you engage with these firms one-on-one, its virtually impossible to ascertain what the potential benefits are for that specific company. You know*

*the rational behaviour at the AltX at the time was to create an environment for small and medium enterprises [companies] to raise capital, raise their profile, improve their governance and give them better terms with their bank – in terms of their debt, and allow them to use the share as currency to go and acquire other assets. And just take them up the corporate evolution to a point where they success for the AltX could be.”*

### **6.8.1 QUALITATIVE ANALYSIS IN SUPPORT OF FINDINGS IN HYPOTHESIS 1**

Interestingly, in Table 6.22 the opinion of the interviewees was presented in a tabular format indicating an impact assessment of how listing on the JSE’s AltX affects registered firm’s performance. After considering other factors, firms’ desire to raise capital was found to be the main motivating reason to list on the JSE’s AltX. However, some firms listed on the lower bourse due to liquidity issues, as well as the need to re-capitalise their asset portfolio. Besides, Case *Bbb* revealed that his company got listed because it wanted to merge its subsidiaries under a group/holding structure, combining its African arm/shareholders with its American and British counterparts. In summary, the influence of firm listing on company performance was on the average reasonable. Although, the level of this impact varied by company, sector and industry. Obviously, the rigour in corporate governance that listings bring enables these SMEs to transition from being either a sole proprietorship or partnership to a well-structured company and/or conglomerate. Nevertheless, this led to the decline of performance in some firms due to the distractions it brought with it.

Besides, Case *Ccc* disclosed that as a result of the significant amount of cost associated with listing, coupled with the fact that the company was unable to raise capital on the exchange, it planned to delist. This led to its unbundling by the firm’s holding company. More so, Case *Ddd* was of the view that the listing requirements was a kind of hindrance, “*reports every now and then, puts pressure on companies*”. Likewise, the need to show investors dividend pay-outs (together with cash-at-hand and profitability levels), meant that the company’s financial statements were either falsified or inflated via a mix of skilful tax avoidance, and even headquarters relocation to other welcoming countries (especially tax havens). Other interviewees believed that it was costly and beneficial, and even helped them to secure a major investor (Case *Vvv*), increase their discrete customer loan amount, boost profits, raise firm exposure and confidence, as well as assist in building an improved company profile. From the aforementioned facts, the researcher finds that the qualitative analysis partially supports the findings of Hypothesis 1, given the responses from the interviewees.



**Table 6.22 JSE’s AltX impact assessment by interviewees**

Interviewee/ Question	Case Aaa	Case Bbb	Case Ccc	Case Ddd	Case Eee	Case Vvv	Case Www	Case Xxx	Case Yyy	Case Zzz	Pilot Case	Outcome
Motivation to register	Raise capital	Merger of subsidiaries	Raise capital	Raise capital	Raise capital	Raise capital	Raise capital	Raise capital	Raise capital	Liquidity Re-capitalise	Raise capital	+ve
Influence on performance	Rigour in corporate governance	Performance declined	Unbundled by holding company	Pressure & falsification of records	Costly & beneficial	Secured a major investor	Neutral	Neutral	Increased loan amount & profit	Exposure & capital	Confidence & better profile	Fair
Contribution to level of entrepreneurship	Neutral stance	Negative stance	Negative stance	Negative stance	Positive stance	Positive stance	Positive stance	Negative stance	Positive stance	Positive stance	Negative stance	Fair
Share capital impact	High yield Lower multiples	Reduced share price	Beneficial for lending	Hostile takeover	ROE JV Acquisition	Acquisition of assets	Share ownership dilution	Debt reduction Acquisition	More disbursement Risk diversification	Leads to growth & development	Acquisition Growth Diversification	+ve
Compliance impact on B-BBEE score	Negative	Risky & Positive	Costly & Negative	Fronting Elite sharing	Equity & Prestige	Accountability	Positive	Positive	Neutral	Positive KPIs & Contracts	Positive Better governance	+ve
Can you recommend SMEs to list	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	+ve
Major market & industry factors	Conflict Defense budget	Health response to COVID-19	Changes in the REPO rate	High rate of innovation	Low lending rate Sustainability	Market risk	Policies Regulation Laws	Not significant COVID-19	Lower interest rates	2008/2009 financial crises	COVID-19 Exchange rates	Strong
Potential threats & weaknesses	Brain drain Infrastructure Supply chain	Recession Cash flow problems	Low demand High default rate	Fuel usage Regulation	High costs Size	Rules 24 months limit	Lack of international competitiveness	Increases IT cost due to fraud	Branchless operation Software	Credit ratings Loan amount	Maturity of the management	Fair

**Table 6.22 JSE’s AltX impact assessment by interviewees cont.**

Interviewee/ Question	Case Aaa	Case Bbb	Case Ccc	Case Ddd	Case Eee	Case Vvv	Case Www	Case Xxx	Case Yyy	Case Zzz	Pilot Case	Outcome
Government support	No	No	No	Yes	No	Yes	Yes	Yes	Yes	No	No	Fair
Impact of international competition	No	Yes Price competitiveness	No	Yes Reduced profits or loss	Yes Cheaper substitutes	Varies	Strong for non-listed firms	Increases branding costs	Strong	Strong Purchasing power	Strong	Strong
Closing comment	Increase in share multiples	Favours larger companies	High cost of listing	Shareholder or investor protection	Strict requirements	Benefits outweigh costs	Good for company image & marketing	High FX costs	Time Patience Advertisement	Weak currency	Small doesn't mean bad	Good

## 6.8.2 QUALITATIVE ANALYSIS IN SUPPORT OF FINDINGS IN HYPOTHESIS 2

Correspondingly, the contribution of the JSE's AltX to the level of entrepreneurship in South Africa was adjudged to be fair, given that it assisted these firms to raise badly needed capital, as well as support ancillary industries simultaneously. This is because all the JSE's AltX listed firms guaranteed the operational sustainability of their suppliers, lenders, distributors, shareholders and employees as they participate in various income generating activities synergistically. Meanwhile, when asked the straight forward question, "*Can you recommend other small businesses to list on the JSE's AltX*", all the interviewees were affirmative, except Case *Bbb* and *Ccc*. In fact, Case *Bbb* recommends that only larger companies should list, because smaller companies would get distracted – having spent over a billion rands ensuring that everything is working fine in his company. While, Case *Ccc* is of the view that under the current market mode, "... *no*", because the exchange is almost flat at the moment, price earnings (PE) is decreasing without support due to crumbling volumes. However, companies can list if the company's earnings are rising astronomically and/or where there is a diversity of earnings potentials in large companies. On the flip side, most of the interviewee's assertiveness is shown in the following quotes:

*"Yes, as I said the listed environment is one that helps to run a company more rigorously and structured and... is not [ehm], what would I say, not reflecting in the share price, then it can of course, it can be damaging because now you have to buy... elsewhere much more expensive companies. I mean, as I said earlier with the multiples, so being listed here, we have a multiple of 4 or 5, however, private companies which are not listed, otherwise are much less much sure operating... you have to pay overseas 5 or 6 multiples, and that of course is a problem" [Case Aaa].*

This stance is further reinforced by Case *Zzz* below:

*"Yes, if the company decide to list the company and that is the objective, they have good business case, why not? Being a listed company comes with its own complexities, it is not everybody... I mean a lot of companies list and then delist, and would not be on that platform. I think it is up to shareholders and directors as to whether that is a suitable business strategy for them, but I mean if it is indeed in their roadmap to do so, I wouldn't discourage anybody from considering it. If you are building up a successful business, you want to have access to capital to expand your business provided your business can. You know certain people are good for certain things. Some guys want to show some fancy KPIs [key performance indicators] and performance ratios, lists and liquidate their positions and leave the liability on innocent retail investors that have invested. If your intention is good, if it is good for the business, then yes.*

*It is not that you can take penny stocks and then list on the AltX, you need to conduct due diligence in any event, which I think is good”.*

Case Yyy believes that listing is good for the right reasons as follows:

*“Yes, I will always recommend [the JSE’s AltX] because it improves the share capital of the firm, especially if you have a vision to expand and do a lot, because for instance if your capital is not enough to meet your demand, then you will be losing money in the end. But if you [are] able to go into such [ehm] areas that can help you raise funds and expand, especially when the market is there, I will always advise that you list”.*

Similarly, Case Vvv considers listing to be beneficial to SMEs in the quote:

*“Of course, I will recommend. Like I said, the advantages of listing on the AltX... the far outweigh any challenges that you may find in being an entrepreneur. You are exposed to good corporate governance; from infancy you have proper structures in place. You have constant monitoring and support from the JSE because you actually have a designated adviser that would actually work with you through the whole listing journey, who would advise you about the JSE’s listing requirement and what you need to do, what you need to avoid doing. So, you would be actually be in good hands. I would actually recommend companies to actually be listed, because also they [are] exposed to many capital streams, where you have even foreign investors coming in as long as they like, [to be a fundamental part of] the vision and the story of the company”.*

Case Eee in his own subtle way would recommend listing to SMEs because:

*“I would yes, I mean if the idea was to access capital or just to bring up further transparency to the industry or even just give the current business a shot in the arm [like COVID-19 vaccination against contagion or business failure], as long as they understand the onerous requirements that come with it, yes”.*

While, the Pilot Case was of the view that management is a very critical factor that will or can determine the success or otherwise of a company, as buttressed by the following statement:

*“I will recommend them, for the right reasons, at the right time, not just to list for the sake of listing, because they think yes, he has a great opportunity to raise some money and get rich, that is the wrong reason. The right reason, is for the right strategic reasons for the company and that could be a number of reasons, whatever it is, but it is specific to the company and that is the key thing. You can’t just go listing is a good thing, so list on the AltX. Why would you want to list on the AltX? What is it gonna do for your business? How are you gonna make it work for you? You know, you mentioned earlier that companies delist, and they get into trouble. All companies get into trouble, that is not a function of the listing, that is the function of bad management and immature management rather than listing. The listing should enhance the business, not attract from the business. But then, you need mature management making that decision to make the listing happen. You cannot have management that you*

*are 25 years old, and you think that you can list a business, those days are gone. Investors want experience, understanding”.*

The abovementioned details reveal that the qualitative analysis partially supports the findings of Hypothesis 2, given the responses from the interviewees.

### **6.8.3 QUALITATIVE ANALYSIS IN SUPPORT OF FINDINGS IN HYPOTHESIS 3**

Expectedly, increased share capital levels was found to be positively linked with listed firms performance and expansionary plans. This results in high yield but with a lower share multiple when compared to what is applicable in Europe and America. However, the share price of these firms have fallen over the years following the 2008/2009 financial crises amidst a recession in South Africa, coupled with the negative impact of the COVID-19 lockdown and restrictions on business operation globally. According to Case Ccc increased capitalisation helps, just as more capital on the balance sheet is beneficial for lending. Since the shares of these registered firms are freely traded on the exchange, the original owners/shareholders of the company might see their dominance and control get diluted after a rights issue by a hostile takeover bid. That said, listing on the AltX might result in a good ROE, debt reduction, greater loan disbursement (i.e. for companies operating in the financial sector), joint ventures (JVs) etcetera. Furthermore, the acquisition of assets to further a company's risk and growth diversification, might lead to a comprehensive and sustainable macroeconomic growth and development in South Africa. From the abovementioned opinions by the interviewees, the researcher finds that the qualitative analysis fully supports the findings of Hypothesis 3.

### **6.8.4 QUALITATIVE ANALYSIS IN SUPPORT OF FINDINGS IN HYPOTHESIS 4**

Over and above that the strict compliance requirement of the AltX was found to be impactful on the B-BBEE score performance of listed firms. According to Case Bbb complying with the B-BBEE legal requirements was risky and positively linked with performance, however, black investors were risk averse. He believed that the compliance requirements were very important, hence do not support the relaxation of rules, but bureaucracy. Similarly, Case Aaa views the B-BBEE requirements as a negating factor, which is against the whole concept of listing and the operation of a free market. While, Case Ccc reveals that the B-BBEE has a negative impact due to its cost component on their operations leading to about 12% free flow shares. This was found to be one of the main causes of liquidity problems on the lower bourse. Moreover, as various companies devise their own strategies, it has been observed that some

shareholders were not willing to give up their own shareholding for black ownership. Besides, black ownership does not really do much due to the quality of these shareholders, when you base your judgement on their contributions to the board. Consequently, instead of emphasising on colour, competence should be encouraged with Black SMEs acting as business enablers.

Interestingly, these concerns also cut across racial lines. Case *Ddd* who is black claimed that the B-BBEE is a thorn in the flesh leading to B-BBEE fronting (because even the security man in front of a company can be fronted as a major BEE shareholder, unknowingly). Thus, on a case-by-case basis the morality of the owner(s) of a company therefore matters a lot, because this had led to legal tussles in court, coupled with the fact that the elite participating in the jamboree as a form of kick-back are also using this medium to further aggravate the level of corruption in the country. According to Case *Eee* who is Indian by South Africa's racial classification, "*the compliance requirements forces you to comply to a high standard*", and brings with it the prestige of being listed, forcing you to work harder, as well as forcing you to gain exposure as a socially responsible component of the host community. Whereas, Case *Vvv* presumes that the B-BBEE compliance requirements act as a form of checks and balances for a public company resulting in enhanced accountability, as well as encourages black entrepreneurship. Concurrently, Case *Zzz* who is Indian (muslim dad and coloured mum) was of the opinion that these requirements impacted on firm operations, because there was a regulated need for expansion, which also brought new opportunities – through the upliftment of the sub-contractors. Likewise, as a matter of fact, complying with the B-BBEE requirements also guaranteed access to government tenders and contracts, which is like killing two birds with one stone. He even went further to emphasise that he was the only non-white executive and managerial team member. However, according to him people were appointed on merit (in his company), which added value to the government indirectly. Lastly, the Pilot Case recounted that the B-BBEE compliance requirements led to better governance and an encouraging performance, *ceteris paribus*. This he sums up thus:

*"I think it does, but I think [ehmm] its about [you know], once have taken the decision to list, you move from being an amateur to a pro. You are playing on a different field, and that requires you to take all the rules very seriously, whether it's the company, the income tax act, B-BBEE, you are in the public domain and you need to comply with the rules not because they are the rules, but because you understand they enhance the value proposition of being listed, and by that I mean you attract investment capital and support, and because you are listed, because you have to comply with these rules".*

From the aforementioned facts, the researcher finds that the qualitative analysis fully supports the findings of Hypothesis 4, given the responses from the interviewees.

### **6.8.5 QUALITATIVE SWOT ANALYSIS IN SUPPORT OF FINDINGS**

Going further, literature studies is inundated with research that identifies the role that market and industry factors play when determining whether a business is a going concern, and which market strategy and investment decision suits a particular industry. This could be propelled by the activities in a geographic and/or demographic market, competition or industry. The interviewees therefore identified the major market and industry factors that impact on their businesses. Case *Aaa* revealed that rising conflicts/war was linked with increased demand for RF antennas which the company sells across the world. More so, enhanced security measures around the world, resulted in larger defence budget and military hardware expenditure/purchase, thereby boosting sales indirectly for the company. In the same vein, Case *Bbb* stated that the health response to COVID-19 was a major industry and market factor that made his company more agile. Instead of producing more finger print recognition devices that required either touch or finger contact, the company opted to manufacture optical facial recognition devices, as a response to the COVID-19 requirements, with little or no need for disinfectants at points of entry or exit. According to Case *Ccc* changes in the regulatory environment is a significant market and industry factor confronting their company head-on. Consequently, changes in the REPO (i.e. the repurchase agreement, transactions and buy/sell-backs) rate in the United Kingdom and South Africa has led to an extremely low exchange rate levels – that is, between the South African rand and the British pound sterling. From an accounting perspective, the company's declaration of its accounting statement in rands impacts negatively on the company. Also, the interest rates have either halted or depreciated with a mild level of inflation. While, low demands caused by the COVID-19 pandemic restrictions has even worsened the company's financials due to higher default rates for the firm's unsecured lending business.

Likewise, Case *Ddd* believed that the high rate of innovation/regulation in the aviation sector puts pressure on companies. The effect of carbon 'emission' tax is that airlines need to buy fuel-efficient planes, which costs them money. Other interviewees believed that South Africa's debt market is underserved, leading to a low lending rate and high gearing rate by listed companies, while the call for sustainable energy is turning the industry on its head as people are moving away from fossil fuel to renewable energy (Case *Eee*). In addition, apart from the aforementioned, market risks, policies, business regulation, laws and lower interest rates are potential sources of worry for the JSE's AltX listed firms.

Besides, according to Case Xxx being listed also exposes you to fraudulent firms and cyber criminals, which leads to higher IT costs. According to Case Aaa, the brain drain, infrastructural gaps and the supply chain deterioration are the biggest country-related threats that are facing listed firms on the JSE's AltX. Equally, the recession in South Africa causes low demand, high loan default rate, cash flow and liquidity problems for companies registered on the lower bourse. In a like manner, declining national competitiveness level, the small size of listed firms when compared to their foreign peers and their poor credit ratings is really impacting negatively on the operations of listed companies on the JSE's AltX. While, the lack of maturity on the part of management is a major weakness for many listed firms. Just as, the use of a branchless subsidiary was also a source for concerns for these firms, because many customers prefer face-to-face communication, ceteris paribus. Case Vvv observes that the 24 months limit given to SPACs to acquire assets is a significant constrain and a potential source of weakness of the JSE's AltX. This is reflected in his response below:

*"... The disadvantage is the time limit or aspect to it, where you [are] given 24 months. Obviously, from experience, like I said [know] that this transactions or deals, they take quite a lot of time and mind you, you also have to raise funds to actually clear a way for the asset that you are trying to acquire. So, it is a whole process again, and there are JSE regulators attached to that asset acquisitions. There is[are] normal JSEs processes that you have to follow relating to your listing. So, there is a whole lot of administration that at times can be a bit of a challenge, especially for small enterprises" [Case Vvv].*

The DTI and the DSBD in cooperation with several government ministries, departments and agencies have really championed the cause of business development in South Africa. In fact, many state-owned enterprises (SOEs) have invested in and supported listed firms in South Africa, which is rare in Africa. Yet, more needs to be done to create awareness and also simplify their documentation processes. On the down side, the political crises in South Africa is fuelling uncertainty, macroeconomic instability and violence, a situation which does not stimulate a healthy investor friendly environment in the country. Although, the ruling ANC government's monetary and fiscal policies are great, unfortunately, it doesn't filter through the channels appropriately. Notwithstanding how great they are in principle, due to high-level corruption and whatever, it is just not filtering down. There is therefore a dire need to either reduce the tax rate or give tax rebates/holidays to small businesses in South Africa, ceteris paribus. In relation to government support for SMEs in South Africa, Case Zzz said:

*"Companies like [ours], like many companies are just unable to access the kind of assistance that governments can provide. It is a handful of silly people, the corruption is steep, that is [it is] people who know people that can get ahead. I*



*have gone through [company xxx], I have gone through fund raising exercise with government entities that were designed by definition to assist people like me [ahh] cos I qualify in a certain band and what have you, I go through with a proper financial plan, sound business plan and I don't even get meetings. So, you don't even get a rejection letter, you know".*

Case Aaa's position was even more reverberating with a word of advice:

*"No. I mean, I think the biggest problem... the investor community doesn't like uncertainty, and as the South African government is not working to erode uncertainty, but fuelling it [ahh] that makes it very very difficult. So, the government certainly could do much more to stimulate a healthy investor friendly environment here in South Africa".*

As for the Pilot Case, the government should pursue an activist intervention in the SME sector, as indicated in the following statement:

*"Well, [in] other jurisdictions around the world, they give tax incentives, they provide mechanisms for those companies to grow, whether it is dispensations on B-BBEE or dispensations on employment or dispensations on tax; make it attractive to list on the exchange. Why is that important? Well, every single employee who has a pension is invested on the JSE, the more companies that are listed there, the more diversification the better it is for everybody's retirement at some point in time".*

Despite the fact that South African businesses are major players in Africa, the impact of international competition from multinational companies from Europe, America and Asia is encroaching on their dominance. This has led to the use of price competitiveness by local firms to fight off the entry and dominance of foreign firms in their core markets. Consequently, more competition has also led to reduced profits or even loss, given the presence of cheaper substitutes in the South African market. Predictably, this could lead to a loss of the bottom of the pyramid market to international firms because of the affordability of foreign goods and services. For the JSE's AltX listed firms the impact might not be much, however, for unlisted firms it could be worse and lead to loss of business, bankruptcy or even business closure. At the same time, it might lead increased branding costs to meet up with foreign firms, as demonstrated in the hotel/hospitality industry. Case Eee spots the ensuing issues with international competition, which is enumerated in his remarks below:

*"Yes, very much so, from my own point of view, alot of our competition was Chinese and Indian. You could purchase a cryogenic tanker in Indian and China very cheaply. But the issue will be that it will take you a very long time to manufacture and the quality wasn't what was offered in Europe or in South Africa. So, yes, if your customer [is] willing to, if cost or price is their only driving factor, then they would go to India or China, but then in six months' time when they need it maintained or repaired, they would probably come to us. But that*

*is a major factor, because if you are not able to get your sales, [it doesn't] there is no incentive to be listed".*

Similarly, Case Zzz believes that competition caused by international firms affect the attractiveness of firm listing on the lower bourse. The quotation below describes his experience:

*"Yes, I think international firms can certainly have an appetite to come to South Africa, it is not questionable but yea, because our currency is so weak, so they've got such great purchasing power because they come with the dollar [14 or 15], I don't know what it is today [rand to the dollar], so you know the purchasing power is great, it is a cheap economy for them. For a small company in the United States, [they] can come here and make a big impact but for a small company in South Africa to go to the United States, it is just too expensive. So, from that perspective".*

Higher market capitalisation has been linked with sustainable economic growth and development. In summary, the interviewees were of the view that an increase in share multiples would be of great value for the JSE's AltX listed firms. It was also practical that the high cost of listing favours larger companies that have the financial muscle to do so. Equally, there was also a need to guarantee shareholder or investor protection, so that the benefits of listing can outweigh the associated listing costs, *ceteris paribus*. More so, it is expected that small firms should brace up to the strict requirements of the lower bourse and also ensure that they portray a good corporate image for marketing purposes. Correspondingly, would be investors and potential listed firms should watch out for the high foreign exchange costs due to a weak currency, and most of all, be patient, because success does not come over night but through hard work. The Pilot Case thus sums up the closing comments with this quote:

*"... So, the reason is you are fighting for money, if that money is going into opportunities outside of this country, [there] is less money for opportunities in South Africa [one]. Two, we need to educate South African investors that small doesn't mean bad, that every single company that listed on the JSE at any point in time was a small company, and we can't have an environment that only invest in big companies. [Ehm] So, that is a whole educational drive that the JSE's AltX needs to do, which we tried but it is very difficult. But the fact is UK understands that, Canada understands that, Australia understands that, the US understands that, we don't. We are prepared to invest in start-ups offshore but not in South Africa [hence we need an attitudinal change towards SME investment in South Africa, so that we can solve the unemployment problem".*

## **6.9 TRIANGULATION OF THE SURVEY QUESTIONNAIRE COMMENTS WITH THE INTERVIEW THEMES**

After a rigorous process of completing the survey questionnaire, the respondents were instructed to complete a comments section in Part VI based

on the information that they provided earlier. This detailed unregulated section was instrumental in covering the gaps in information that cannot be provided on a continuum/spectrum of a 5-point Likert scale. More importantly, the comments section unpacks the merit and demerits of listing on the JSE's AltX, as well as point out the prospects and risks that are associated with registering on a stock exchange. Expectedly, the informed opinion of the JSE's AltX listed company's CEOs/directors/TMT members is vital and would assist in exposing issues that are not adequately covered in other sections of this questionnaire, as a precursor to the semi-structured interview case study. Given that this study uses the pragmatism research philosophy, the researcher decided to triangulate the findings of the qualitative interview study with the commentary provided in the survey questionnaire. Consequently, themes emanating from the comments section were deconstructed into strengths, weaknesses, opportunities and threats sub-headings using the [tagcrowd.com](https://tagcrowd.com)<sup>15</sup> word cloud artificial intelligence algorithm to visualise word count and thematic frequencies. This therefore complements and augments the rich, in-depth analysis/findings that emerged from the case study investigation and report.

### 6.9.1 STRENGTHS OF THE JSE'S ALT X

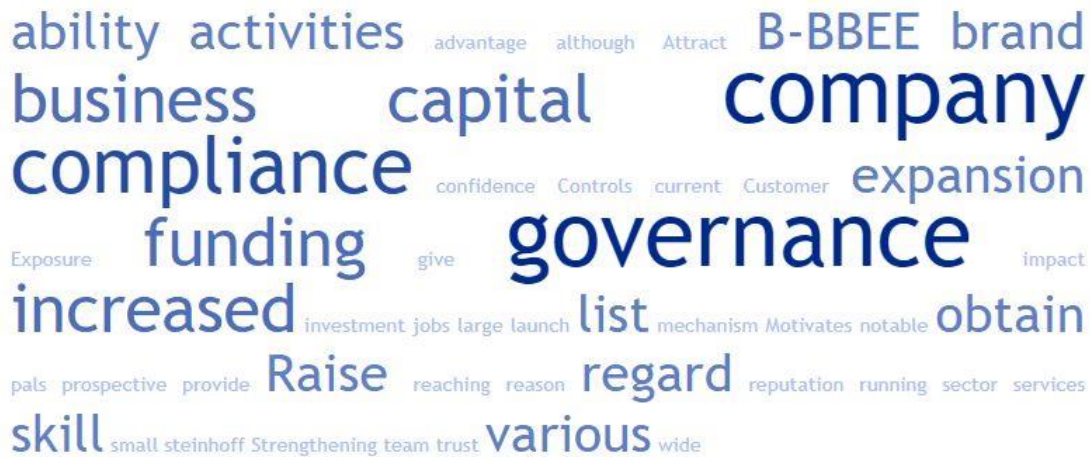
In the survey questionnaire comments entry for the strengths (or strong points) of the JSE's AltX value proposition, 30 respondents representing 63% of the total responses gave an unabridged opinion of this phenomenon. The main strengths identified was that listing on the JSE's AltX increased their company's focus on governance, as well as improved their corporate profile and visibility (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015; Bosma and Kelley, 2019; Bosma et al., 2020; Bowmaker-Falconer and Herrington, 2020). It also enabled them to easily obtain external funding from banks. In addition, it was observed that listing opens the gate wide to capital which can be used for various business activities such as expansion, increasing market share or R&D activities etcetera. According to Case Zzz listing positively impacted on the company performance, as attested to in the quote below:

*“One thing that affected the[our] performance was that it gave us access to serious capital. Naturally, the moment we listed; we had a meeting with every single bank who kind of wanted to get on board. The story was very good, when we listed it was over-subscribed [ehm], share value rocketed up, I think potentially close to 100% on listing. So, there was a lot of buzz in the industry. So, I think what that allowed us to do was to do more alot efficiently in banking terms, consolidating debt, we needed for the development are for securing large tracks of land. We needed some good banking facilities; I think certainly*

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<sup>15</sup> Designed by a Stanford University educated human-centred design, spatial computing and ethnographic UX research programmer, Daniel Steinbock, PhD.

*that opened the door to that on the AltX. The listing in general on the AltX was purely by definition in terms of the slightly less punitive reporting requirements, as well as in terms of the turnover of the company. You know the kind of numbers/profitability is why we were directed to the AltX instead of the Main Board.”*



**Figure 6.15: Visual word count and thematic frequencies for the Strengths of the JSE’s AltX (Source: Authors’ compilation)**

From Figure 6.15 words like company, governance, compliance, capital, B-BBEE, brand, funding, increased, raise, skill etcetera reverberated across their commentary. Unsurprisingly, these themes were identified in the qualitative case study analysis. In addition, the respondents stated that listing ensured the attraction of a skilled workforce, as mentioned a respondent “*our team comprises of various skilled members that ensures a smooth day-to-day running of our business.*” Hence, this motivates you to meet compliance and governance standards, raises company profile, attract international investment, increased capital, which led to growth and a comprehensive customer focus. Apart from improving access to surplus funding and/or obtaining funding for expansion, it made listed firms to become more flexible, diversified, trustworthy (by virtue of listing on a regulated exchange), which strengthens the company’s brand, leadership skill sets and controls. The Case Aaa agrees with this presumption in the following statement:

*“So, I think the positive aspect of being listed is that it [ehm] provides a lot of rigour, So, [you know] everything you kind of do in a listed environment needs to be well-structured. [Ahh] and you always need to keep in mind the stakeholders in particular, the shareholders... that whatever you do is defensible, and they are happy and contained and agree with what you planned of doing. So, there is a lot of [ahh] corporate governance you really need to get into place in order to make that work. From an operational point of view, you know it is definitely [in my head] beneficial. It also gives you [an] easier access to capital. So, when you want to raise money [ahh] either from a bank or collecting from shareholders for further investments, I think this will be the benefits...”*

Likewise, the atmosphere of being a registered firm enabled listed firms to work well under pressure and reaching targets, as well as benchmarking with sector companies through innovation, perseverance and exposure. Thus, this shows diligence and builds confidence for prospective investors. One of the commentators was however cautiously optimistic in the following quote:

*“The ability to launch an SME on an exchange does give a company added reputation, as it implies good governance and compliance, although these beliefs are flawed when regarding Tongaat and Steinhoff [I do not regard B-BBEE as good governance, I am afraid, just a job for pals mechanism for the current government].”*

### **6.9.2 WEAKNESSES OF THE JSE’S ALT X**

From the above statement, there appears to be some potential problems with the JSE’s AltX, especially with respect to the compliance regulation in South Africa. Consequently, in the survey questionnaire comments entry for the weaknesses (or weak points) of the JSE’s AltX value proposition, 29 respondents representing 60% of the total responses gave an uncut opinion of this phenomenon. The main weaknesses identified was that listing on the JSE’s AltX exposed several firms to burdening listing requirements and regulatory compliance, which resulted to high costs for the firm, just as market sentiment could be negative at the time of listing depending on the pedigree of the company and quality of the board (Mlonzi et al., 2010; Harvey, 2016; Bosma and Kelley, 2019; Bosma et al., 2020; Bowmaker-Falconer and Herrington, 2020). Some of the respondents have this to say about the disadvantages of listing on the JSE’s AltX:

*“Too many to mention, but the restrictive unbalanced compliance issues and a severe lack of liquidity in the market makes it extremely difficult for small businesses”,*

*“Our listing on AltX only increased or regulatory costs and the level of compliance and reporting when concluding transactions”,*

*“Listing on the stock exposes the company to all sorts of publicity and increases stress and anxiety level for the company’s board of directors, most especially the CEO as his performance is tied to the share price and profitability – unlike amongst [other employees].”*

According to Case Vv listing became a cost spinner for his company, as attested to in the quote below:

*“It is a fundamental stab in that once you have, because as I said it is capital intensive, in that obviously you have to engage consultants, you have to do financial due diligence of the assets that you are trying to acquire. So, all that is tasking, in most cases it would be in international markets not necessarily*

*maybe in South Africa. You have to do it let's just say for arguments sake in Egypt. And then you engage international consultants to actually undertake the work that you need to do and make your own decisions in the search, you will need a deep pocket to actually finance those goals before even going into the actual cash consideration that is required actually to acquire the assets. So, it is quite capital intensive, but it is[will] I say expose you to investors who are like minded, who would like to invest and get returns in such assets...So, as a SPAC you are given 24 months period to make a viable acquisition, right... But you understand that some of those deals, or such transactions are quite tasking, the require a lot of time, there is a lot of input in capital raising, which essentially then elapse in a 24 months period, and as a result you are then pushed out of the JSE because of failure to live up to the requirements. So, that is the situation that we find ourselves in..."*



**Figure 6.16: Visual word count and thematic frequencies for the Weaknesses of the JSE’s AltX (Source: Authors’ compilation)**

From Figure 6.16 words like compliance, listing, AltX, cost, loss, reporting, requirements, sentiments etcetera reverberated across their commentary. Expectedly, these themes were identified in the qualitative case study analysis. More so, the respondents stated that their current weaknesses are [not]attracting big potential clients, the wrong people in wrong positions, reduced revenue due to losses, additional cost associated with listing, the related auditing requirements, which are expensive and timeous (i.e. periodic). Other weaknesses include struggling with handling a huge customer and shareholders database, discounted shares based upon the risk perceptions of the JSE’s AltX, loss of equity, marketing costs, volatility caused by share price speculators, reporting and management overhead, as well as the dilution of decision-making power. The Pilot Case agrees with this supposition and also offers a piece of advice in the following quote:

*“It is specific to the company, you know the growth rate, the exchange rate, the socio-political situation, all has an impact on the decision to list. But at the same time, you can’t manage/control those factors, so, manage what you can control and understand. Again, I come back to the fact that where there is a specific*

*rationale for listing, don't try and time the market, list when it is appropriate for you. You need the money today not tomorrow, not when the exchange rate is at 10 [rands] to the \$, not 14 [rands] to the \$. You can't control that. So, sort it out, you understand what I am saying? Lots of factors affect the decision to list. So, what? Are you going to close up your business because the exchange rate is going against you or COVID-19 has impacted the growth rate? Make a plan, sort it out. Diversify your product range, find new customers."*

Likewise, listing puts undue pressure on SMEs. There is also a requirement to report all the internal communication of listed firms to the JSE that kind of reveals the business secrets of various listed companies to the public and investors for scrutiny, and their competitors too. Matter-of-factly, compliance is stifling and makes agile/nimble firms to become slow and bureaucratic. This is evidenced in the following quotes by respondents:

*"Non-execs directors can make you focus totally internally, [with] politics, too much administration for reporting. If you are under a billion or two, don't even consider it",*

*"Unless a specific capital raise tied to AltX listing motivates AltX listing, the cost of listing is high (relative to the upside benefits)",*

*"I believe that stock exchanges are legacy institutions that do not fit the needs of the 21<sup>st</sup> century. The problem is that they are based on financial measures and disregard other types of wealth as well as resource management and the SDGs."*

Lastly, the one of the major weaknesses of the JSE's AltX is that it causes directors/investors/shareholders sentiments. This leads to a sense of entitlement and distrust between all the relevant stakeholders. Correspondingly, this problem is further worsened by the lower bourse demands that listed firms must comply with all requirements, which raises the need for financial support, liquidity, business rescue, bankruptcy and even business closure, *ceteris paribus*.

### **6.9.3 OPPORTUNITIES OF THE JSE'S ALT X**

In the survey questionnaire comments entry for the opportunities (or prospects) of the JSE's AltX value proposition, 29 respondents representing 60% of the total responses gave an uncensored opinion of this phenomenon. The main opportunities identified was that listing on the JSE's AltX increased the ability of registered firms to raise capital in a good market, which led to an improved business capacity depending on your area of operation, sector and industry. More so, apart from the fact that the biggest opportunity a listed company can have is access to funds from various sources, there is also more room to expand and grow a business from scratch due to very limited competition in the

marketplace (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015; Bosma and Kelley, 2019; Bosma et al., 2020; Bowmaker-Falconer and Herrington, 2020). Although the opportunities available to exploit is minimal, there is room to review the impact of Black empowerment on skilled White, Indian, Coloured, the physically disabled and women in South Africa. This could also trigger a multiplier effect, as well as kick-start higher growth levels in the South African economy. According to Case Vvv listing can open doors to opportunities, given the fact that one of the main objectives of setting up the AltX was to encourage, support and facilitate BEE transactions on the exchange, as attested to in the quote below:

*“I would, I mean, as I said, one of the advantages of listing is that you are exposed to the market, you have exposure to capital and there is good corporate governance that you [are] actually entrenched in from the on-set. So, it actually encourages what I will say Black entrepreneurship in a sense, but obviously, you need to be fully prepared to need to have a taxing enrol. You need a proper plan on how you are going to actually create value for your investors.”*



**Figure 6.17: Visual word count and thematic frequencies for the Opportunities of the JSE’s AltX (Source: Authors’ compilation)**

From Figure 6.17 words like company, opportunity, growth, investors, market, listed, support, capital, expansion, exposure etcetera reverberated across their commentary. Expectedly, these themes were identified in the qualitative case study analysis. In addition, the respondents stated that it presented opportunities for expansion into foreign markets, since listing gives firms enhanced visibility and exposure to both local and foreign investors. Moreover, new investors could facilitate large projects that can boost company growth over time. One of the respondents stated that:

*“If the traditional measures are blended with and aligned with the goals and targets of the SDGs, using valuations such as WAVES and co-benefits, there is an opportunity for a new improved exchange that supports sustainability.”*

This implies that the mining, energy and agricultural sectors offers a good chance to improve their sustainability footprints via greater levels of



environmental protection and regeneration, community engagements and the recruitment and training of staffs from the host community. This is in furtherance of the sustainable development goals (SDGs), which is a win-win situation for everyone. According to Case Aaa there are significant prospects for the JSE's AltX listed companies in the quote below:

*"[Ahh], yes, if the government creates an environment which is more investor friendly and conducive. [Ahh], then I think there is hope that this [will get] better"*

Likewise, the Pilot Case was even more honest as enumerated in the following quote:

*"Well, other jurisdictions around the world, they give tax incentives, they provide mechanisms for those companies to grow, whether it is a dispensation on B-BBEE or dispensations on employment or dispensations on tax. Make it attractive to list on the exchange. Why is that important? Well, every single employee who has a pension is invested on the JSE. The more companies that are listed there, the more diversification the better it is for everybody's retirement at some point in time."*

Similarly, listed firms on the junior board have exposure among the JSE listed firms, where there may well be backward, forward integration of firms with industry leaders on the Main Board. Equally, listing offers the prospect of attracting investors, clients, talent and technical support from the bourse, which also creates opportunities to invest in bonds and buying of shares across board, increasing access to capital, digitalising products, aiding firm diversification and also growing the revenue potentials of registered companies.

However, the industry sentiments on the exchange is still low one decade after the 2008/2009 financial crises when their finances were exposed to these financial shocks, and are still in a recovery mood given the current market analytics. Some of the respondents thought that the opportunities available on the JSE's AltX were very limited in the quote below:

*"None within the current structure other than delisting",*

*"I cannot think of any opportunities as the equity market is not receptive to small companies listed on AltX".*

#### **6.9.4 THREATS AFFECTING THE JSE'S ALT X**

From the above statement, there are some poignant issues that negatively impacts on the operation of the JSE's AltX, especially with respect to the compliance regulation in South Africa. Consequently, in the survey questionnaire comments entry for the threats affecting the JSE's AltX value proposition, 29 respondents representing 60% of the total responses gave an

unabridged opinion of this phenomenon. The main threats identified were numerous (Mlonzi et al., 2010; Harvey, 2016; Bosma and Kelley, 2019; Bosma et al., 2020; Bowmaker-Falconer and Herrington, 2020).

- (1) The listing on the AltX hamstrung the company with regards to the time within which it could conclude transactions due to the additional governance requirements.
- (2) The threats to having a listed company is having so many shareholders who want a return on their investment and in turn put the company under immense pressure.
- (3) Share prices may not reflect value when there is a distorted demand due to the activities of speculators and short-term traders.
- (4) Unwanted attention sometimes particularly for company executives.
- (5) Huge losses may be incurred by listed firms, resulting in closure of businesses.
- (6) Being small means that you are not in the radar of big institutional investors, and the cost associated with listing can be negative relative to the size of the company.
- (7) The dilution of ownership caused by open market share sales implies that an impending hostile takeover might be at the corner.
- (8) The loss of management focus might lead to lose management obligations on the core operations dealing with compliance and external relations of a company, which is at the heart of the core culture of being listed on a stock exchange.

In fact, for a company to derive the maximum benefits from listing, that company needs to be worth between a billion or two billion rands, or you don't even consider it at all.

According to Case Zzz the impact of the 2008/2009 financial crises is threatening the operation of several listed firms on the JSE's AltX because of their significant exposure to foreign portfolio investors:

*"For [company xxx], I think specifically the 2008/2009 financial crises [impact on our business]. Looking at banks' lending criteria, the fact that there was, that impacted, that was the single most significant macroeconomic factor that filtered through and severely affected our business and impacted negatively. And it happened just after, few months after we listed. We had at [company xxx] an order book that was full, but when we listed the shares [was] over-subscribed. The business itself was sound, but in order... our revenue came from mortgage bonds. [Ahh] 2008 financial crises hit and then the banks stopped granting mortgage bonds. Initially, our pipeline, it was severe, there was a back log, there was a queue and it was stopped. Everything came to a grounding halt. Alright, when I say everything came to a grounding halt, sales was there, interest was there, we had clients who were there, the South African, the other factor that really played into the sales process was that even more so*

*through the financial crises was that we dealt with the 'affordable housing market', which traditionally focussed on the previously disadvantaged communities, but there were also the mass middle market that occupied government jobs, policemen, nurses, teachers okay. Good earners you know, joint household income was good. It was efficient and the government was looking after this people. However, the banks' lending criteria on the retail side, on credit cards and revolve credit loans was so reckless pre-2008 that every 9% of our clients had garnishing orders on themselves. So, the process pre-financial crises was that we had to help rehabilitate these clients to have no bad credit in order to qualify for the mortgage bond. That was already a challenge on our business. Okay. And that is a macroeconomic factor that actually filtered through our business..."*

Case Aaa went philosophical about the listing environment on the AltX, as attested to in the quote below:

*"I mean, so, you will have always the option to do a rights issue and go and raise capital. It is just that this point in time with low multiples like [you know what I mean], what we find it particularly challenging at the moment is [yield]... At the moment being listed on the stock exchange in South Africa fetch lower multiples than privately held companies in Europe or in the United States [5 multiples in South Africa]. While when you then pick up companies privately in Europe or in the United States, then you will have to buy them at 6 or 7 multiples. [Ahh] so that is a big problem [you know] that means that you will buy earnings diluting, and that is something definitely what the JSE or the investor community in South Africa must work on... Yes, being listed and the whole concept of being listed is that of free market and that people sell and buy your shares as they seem fit. Now to have a B-BBEE requirement in that is kind of difficult, because, you know it is almost like unnatural. On the one hand you want to create a free market that people can sell and buy at their will, and yet you need to somehow get an ownership component, which is black loans that makes it very tricky. You know it is almost like forcing a round peg into a square hole. [You know] it doesn't go easily together... I mean you know for... [I don't know] what to say because 95% of our revenue [people don't ask for B-BBEE]. That is in my head a problem currently [you know] if I look at the... What I said in addition was that 95% of our revenue is through export, so, our clients are in worlds overseas, they are not so, it is on merit. We are bringing in money into the country by exporting, so we are creating jobs. And you know help the GDP, yet in the scorecard for B-BBEE there is no acknowledgement, [ehm] there is no benefit given towards that and that I find strange and in-correct."*



**Figure 6.18: Visual word count and thematic frequencies for the Threats affecting the JSE's AltX (Source: Authors' compilation)**

From Figure 6.18 words like compliance, listing, AltX, cost, loss, reporting, requirements, sentiments etcetera reverberated across their commentary. Expectedly, these themes were identified in the qualitative case study analysis. More so, it is no longer news that most JSE's AltX-listed firms struggle to fund key projects – a situation that threatens their growth and stability. Also, there exists fierce competition between local companies and their foreign counterparts in South Africa. Likewise, the macro impact of enforcing stringent policies is that highly skilled people leaving are leaving South Africa to more business-friendly countries/locations. Taken together, there is political crises and insecurity ravaging the soul of the country, while several anti-competitive policies are making South Africa a less attractive location in SADC and Africa as a whole. Furthermore, most of the listed firms also lack top-notch innovation and R&D facilities, which can be value adding in the long run. While the impact of a COVID-19 induced global recession has led to shrinking demand for their products and services. Concurrently, many South Africans prefer to invest in large corporations, in the process inadvertently ignoring small firms. There is also a problem of market volatility, as stated earlier, as well as the loss of market share and management control to competitors because of careless decisions that diminish the reputation of both the management and government. Lastly, the focus on financials, rather than whether a company follows green practices which is aligned with the SDGs is a short-sighted view, which holds little relevance for the future of the nation. One respondent report that: *“If we don't delist, there may be a hostile takeover, and we lose control of the direction we set to in”*. This shows the fear amongst the directors of listed companies on the JSE's AltX of a threat of being overtaken by investors, which should not be so. According to Case Eee competition can be ferocious, which is captured in the quote below:

*“I mean [our cryogenic tankers], they are a bit more expensive than India and China, but will be definitely be a lot [more] cheaper than Europe and the US.*

*[But] if we can improve our timelines, if we get the materials and our labour can deliver on time, we will definitely be the preferred suppliers to the West. Yes.”*

The Pilot Case also reports about the problems with management sincerity after listing, which at times can be dubious, as demonstrated in the quote below:

*“So, for me the biggest one is maturity of management, and by that, I mean [you know] management now banks, all of a sudden is R 50 million in their banks account [not in their personal bank accounts but in their company banks account]. Now, they start you increasing... remuneration goes from what they were paying themselves to five (5) times that number, orders start getting created, certainly in the late 2000’s, started buying CFTs, single stock futures, and taking money off the table. And all of a sudden, they weren’t worried about the business but worrying about the share price, and the share price is a function of supply and demand. It’s the one thing in the whole equation of being listed that you can’t control. So, manage what you can control, sell more products, manage your costs [you know], ensure that your shareholders understand and appreciate the value of your business. So, maturity of management is a big factor [huge factor].”*

Finally, one of the main threats facing the JSE’s AltX is that many industry practitioners and policy makers have been found wanting of jumping into hasty conclusions about the financial situation of listed firms and compliance matters. For instance, Mathura (2009) finds that higher B-BBEE scores led to greater levels of profitability. Just as, Akinsomi et al. (2016) was of the view that highly rated B-BBEE firms in the property sector encountered lower risks and superior higher returns than non-B-BBEE rated firms. However, in the long-run, Mehta and Ward (2017) finds that listed firms on the JSE’s AltX that have high B-BBEE scores generated lower returns than those with lower scores on the junior bourse. This conflicting data and report therefore calls for caution in the implementation of the B-BBEE programme. Unsurprisingly, Pike, Puchert, and Chinyamurindi (2018) notes that B-BBEE was promoting tender corruption and also putting an economic strain on SMEs. Also, being black-empowered might not lead to increased revenue, profitability and a larger market share for B-BBEE compliant companies (Mokgobinyane, 2017). Consequently, the high cost of B-BBEE compliance/actualisation can be the major cause of lower returns in some listed companies. As a matter of fact, as observed by Van der Merwe and Ferreira (2014) the generic elements of the B-BBEE score had different impact on listed firm’s market performance. This is because the aggregate effects can be prone to distortions due to the economic impact of the costs/benefits on each of the generic scorecard elements, which might actually cancel each other out (Kruger, 2014). The researcher finds that the B-BBEE implementation could be a significant threat to the JSE’s AltX listed firms, which could lead to brain drain and the relocation of businesses abroad.

## 6.10 CHAPTER SUMMARY

This chapter presented the empirical analysis results and findings of the questionnaire survey which was distributed to 60 JSE's AltX listed company's CEO/directors/TMT members, as well as the results and findings from the secondary data analysis. Correspondingly, the analysis and outcome of the semi-structured case study interview was presented in this chapter. Based on the conceptual framework and theoretical model that was elucidated in the previous chapter, the findings of this research reveal that firms that are listed on the JSE's AltX are more likely to perform better than their unlisted peers (i.e. other SMEs with a similar profile), which provide answers to the first research question "Does listing on the JSE's AltX impact on firm performance?". This therefore ensured that the researcher achieved the first primary objective of this study which is to determine the impact that the JSE's AltX has on listed firm's performance. Similarly, this research reveals that the unprecedented performance of the listed firms on the JSE's AltX is positively linked with the level of entrepreneurship in South Africa, which answers the second research question "What is the relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa?". This implies that the second objective of this research, which is "to determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa" was achieved.

In addition, the findings of this research reveal that the rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies' expansion, which answers the third research question "How does increased share capital levels influence the expansion and performance of listed firms on the AltX?". This ensures that the first secondary objective of this study which is to quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms was achieved. Lastly, the findings of this study shows that the higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score. However, the B-BBEE was found to have a mixed effect in both the secondary analysis and the semi-structured interview case study, which answers the fourth research question "How does the compliance requirement of the AltX impact on the B-BBEE score performance of listed firms?". This suggests that the second secondary objective of this study which is to ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms, was also achieved. Besides, the qualitative analysis played an important role in substantiating the findings of the quantitative analysis, and also assists the researcher to clearly resolve the inconsistencies in the findings of previous studies, because similar findings emanated from both approaches using primary and secondary data. Furthermore, the comments of the survey

respondents provide support that the regulations and compliance requirements established by policymakers/the JSE can create setbacks for the JSE's AltX listed firms.

The next chapter, the discussions, conclusions and recommendations (i.e. Chapter 7) deliberates on the findings of this thesis, and also puts forward a poignant review of its implications to industry practitioners, policymakers and researchers. The researcher finds it absolutely important to interpret these findings all encompassingly, so that the conclusions drawn from it can be both valid and reliable. Afterwards, the researcher presents a reliable model for use by the JSE's AltX listed firms. In the model, a solution for small business listing on the JSE's AltX will be provided, based on the outcome of the research results. Furthermore, the model would also indicate how these firms can overcome the listing requirements and issues pertaining to the lower bourse.

## **CHAPTER 7: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 INTRODUCTION**

The previous chapter presented the empirical analysis, results and findings of both the quantitative and qualitative parts of this study. As a pragmatic study, the survey questionnaire data and secondary data were empirically tested, after which a semi-structured case study interview was carried out in order to triangulate the results that emanated from the analyses. This chapter therefore provides the discussions, conclusions and recommendations of the thesis with a view to synthesise the empirical results that were derived from the previous chapter. Moreover, the discussions and conclusions presented thereafter was guided by both the conceptual framework and the theoretical model of this current study. Furthermore, this discussion was organised sequentially in an order mimicking the objectives and findings of this research putting into context contemporary academic knowledge, literature, foundation and scholarship. Expectedly, this chapter uniquely sheds light and also extends the review of critical theoretical insights concerning the impact of firm listing on the JSE's AltX. Thereafter, the recommendations of this study based on the reviewed literature and the empirical analysis/results was put forward, bearing in mind its limitations which were vividly enumerated and the directions for future lines of inquiry.

The chapter begins by briefly highlighting the purpose, problem statement, objectives, questions, as well as the approach of the current study. This was presented chronologically in sync with the results obtained from the test of the hypotheses and the empirical analysis carried out for this study. This was followed by the theoretical contributions and a discussion on the resultant model for small business listing on the JSE's AltX. Interestingly, the conclusions of this research were presented thereafter with a view to generate attention and interest from policymakers, researchers and industry practitioners. Furthermore, it was presented under the following sub-headings; managerial and policy implications, contributions to new knowledge and suggestions for future studies. The limitations of this present study, as well as the recommendations for future research were later put forward taking cognisance of nuance perspectives emanating from both the literature studies and the empirical analysis. In conclusion, the chapter ends with a summary of the contributions that the study makes to the extant body of knowledge on firm listing on the alternative exchange in South Africa.

### **7.2 PROBLEM STATEMENT AND PURPOSE OF THE STUDY**

Despite the fact that the JSE's AltX was created to assist listed SMEs to raise capital, as well as finance their expansion and transformation into high growth



firms, this has not been so. Furthermore, because of the growing disconnect between finance and real sector activities (United Nations, 2016), the AltX is supposed be the platform where capital raising activities can be redirected to fund firm acquisitions, improve business processes and also accelerate the process of sustainable national growth (Heerden, 2015). However, this is not going according to plans with just a few companies currently listed on the exchange experiencing lower liquidity levels and diminishing market capitalisation. Besides, about a quarter of firms that got listed on the lower bourse have either been delisted or promoted to the Main Board (Cheyne, 2016). This serves as a motivation for the researcher to probe the impact of listing on the JSE's AltX on firm performance and the level of entrepreneurship in South Africa.

Given the high rate of SME failure rate in South Africa, it is expected that firm listing on the JSE's AltX will definitely impact on the share capital levels of these companies, their B-BBEE score performance and also assist in boosting the level of entrepreneurship in South Africa. Unfortunately, few studies have been conducted in this area with conflicting outcomes/findings about this phenomenon. Although, some studies have empirically measured the positive impact of IPOs and share capital on the risk-based performance of companies that are listed on the JSE AltX, the major limitation of these previous studies can be traced to their use of only secondary data, which relied on market-based proxies (Mashaba, 2014; Heerden, 2015; Ungerer, Gerber and Volschenk, 2015; Bosma and Kelley, 2019; Bosma et al., 2020; Bowmaker-Falconer and Herrington, 2020). While IPOs and share capital price accurately reveals the market value of businesses, it does not explain in detail the impact that listing on the lower bourse has on firm performance and entrepreneurship. This explains why the findings of some studies reveals that listing on the JSE's AltX is negatively linked with firm performance (Mlonzi et al., 2010; Harvey, 2016). It is against this backdrop that this study measures the impact that listing on the JSE's AltX has on both firm performance and the level of entrepreneurship in South Africa using multi-level model analysis that encompasses both primary and secondary data together with a semi-structured case study interview. By using this rational and pragmatic approach, it is expected that the accuracy, reliability and validity of the findings of this study can be generalisable with broader applicability beyond this context.

The purpose of this study was to explore and analyse the impact that the JSE's AltX has on the performance of listed firms, as well as determine the effect of this phenomenon on the level of entrepreneurship in South Africa. Consequently, in order to achieve the goals of this study, the researcher was able to carry out a conceptual identification of the operational processes of the JSE's AltX using entrepreneurship theory (i.e. Chapter 2 and 3) and processes

to incorporate the idea that the AltX capital market financing contributes significantly to broader industry disruption (i.e. Chapter 4). This was made possible through the quantitative and qualitative identification and description of the AltX listed firms using theory-based empirical research (Chapter 5 and 6). Expectedly, this led to the development of a model (i.e. Chapter 7) that elucidates a rational, specific and targeted approach for the companies that are listed on the AltX, as well as for intending SME's that might want to join the lower bourse. Apart from the current research filling the gap in extant theory, it also contributed to an up-to-date information repository on theory development in the field of small business development, entrepreneurship and capital market financing in South Africa. Furthermore, the reviewed theoretical and empirical works were deconstructed in Chapters 2, 3 and 4.

### **7.3 THE THEORETICAL RESEARCH**

In Chapter 2, the concept of entrepreneurship was dissected, traversing from its historical perspectives to its schools of thought, types, nature and the characteristics of entrepreneurship, before identifying the role entrepreneurship plays in South Africa. This led to an informed discussion on the prevailing TEA rate in South Africa, as well as the current entrepreneurial ecosystem in South Africa. On top of that, in Chapter 3, a comprehensive overview of the small business development environment was carried out as a precursor to the next chapter. Interestingly, the researcher was able to provide a cogent definition of the term SME, distinguish between the various types of SMEs, and also identify the differences that exist between the term entrepreneurship and SMEs. This led to a discussion about SMEs in South Africa and the factors contributing to the success of SMEs in South Africa. Likewise, the government intervention (via MDAs operating) within the SME sector was critically appraised, side-by-side (i.e. along with) the problems confronting SMEs in South Africa. Thereafter a SWOT analysis of South Africa's SMEs was carried out followed by a recommendation (or prognosis) of the way forward. In Chapter 4, a critical synopsis of the JSE's AltX was conducted. Firstly, the researcher undertook a precursory contextual literature review, followed by the presentation of the theoretical evidence supporting capital market listing. Secondly, the researcher disclosed the nature of the JSE's AltX by comparing its listing requirements with that of the JSE Main Board, trailed by a review of the JSE's AltX impact on the entrepreneurial ecosystem in South Africa. Going further, the onus fell on the researcher to also bare the facts with respect to the advantages/disadvantages of listing on the JSE's AltX by clearly stipulating the corporate governance requirements of the lower bourse, as well as identify the risks confronting listed companies on the junior board. The problem statement was framed in view of the existing challenges encountered by the JSE's AltX listed firms in South Africa. Finally, the ensuing discussion was then shadowed by a comprehensive

review of the performance of the JSE's AltX in relation to registered firms operating in various sectors of the South African economy.

#### **7.4 THE RESEARCH QUESTIONS AND OBJECTIVES OF THE STUDY**

There is a Cameroonian adage that goes thus “if you ask questions, you cannot avoid answers”. Questioning itself is a skill especially if it has to do with knowledge, contrariwise, ignorance about a particular phenomenon prevails, and learning stops. Although asking questions is childlike and diminishes intellectual haughtiness, in order to seek the truth, a researcher needs to ask pertinent questions. Truthfully, the question a researcher asks determines the focus of a study, and also directs its research methodology. In an attempt to achieve the purpose of this study, the following research questions were formulated the researcher: Does listing on the JSE's AltX impact on firm performance? What is the relationship between the JSE's AltX listed firms and the level of entrepreneurship in South Africa? How does increased share capital levels influence the expansion and performance of listed firms on the AltX? And, How does the compliance requirement of the AltX impact on the B-BBEE score performance of listed firms? Based on the above-mentioned questions, the researcher developed the theoretical model of the study. As well, the aforementioned research questions also guided the development of the operationalised conceptual framework for this study. Instead of using one method (which leads to a methodological bias), the researcher employed pragmatism research philosophy; combining both deductive and/or inductive inferences (Chapter 4 and 5).

As noted earlier, there were inconsistencies in the findings of prior studies, consequently, the triangulation of both the literature and empirical data/findings strengthened the conclusions and recommendations of this study. Since the research hypotheses were formulated from existing scholarly literatures and past empirical works in the field of entrepreneurship, small business development and entrepreneurial finance, theoretical synthesisation was in sync with hypotheses formulation – unlike other study's reliance on either quantitative or qualitative approaches to do so. Furthermore, the research questions motivated the researcher to carry out an investigation into this under-researched area considering the enormity of the financial commitment made by companies that are listed on the JSE's AltX. Thus, this study investigated the impact of firm listing on the JSE's AltX on firm performance and entrepreneurship levels in South Africa, in order to resolve the germane issues that were raised by the research problem and questions of this study, and also to achieve the purpose of this research.

The first and primary objective of the research was to determine the impact that the JSE's AltX has on listed firm's performance. The main finding identified was

that registering on the lower bourse helped to improve company performance. Likewise, listing increased the level of media publicity of registered firms, and also raised their corporate profiles both locally and internationally. Similarly, listing aided the development of a good record keeping culture in registered companies, because it enabled them to comply with existing regulation. In addition, the JSE's AltX Market capitalisation levels was linked with the positive performance of listed firms, just as the number of employees, foreign assets, and the total equity and liabilities of registered firms were also directly associated with positive performance.

The second primary objective for this study was to determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa. The main finding identified was that SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa. Similarly, registering on the junior exchange encouraged entrepreneurial risk taking, as well as increases business confidence, and also motivates entrepreneurs, since it creates a high energy environment, where ideation thrives iteratively. Correspondingly, the turnover or total revenue, market capitalisation, total investments and loans, as well as the earnings yield of the JSE's AltX listed companies was positively related to the level of entrepreneurship in South Africa.

The third objective was to quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms. The main finding identified was that registering on the AltX enabled listed firms to gain international exposure, and also assisted in consolidating their industry position. Furthermore, the market capitalisation, foreign assets, foreign liabilities, quick ratio (i.e. liquidity levels), as well as the ROA of these companies was positively linked with the increased capitalisation and the expansionary drive of the JSE's AltX listed firms.

The fourth objective was to ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms. The main finding identified was that the implementation of good governance systems like the B-BBEE by listed firms makes them more attractive to all stakeholders. Equally, the B-BBEE composite score of listed firms, their profit after interest and tax, the value of their transactions, the value of their patents and trademarks, as well as the ROA of the JSE's AltX listed firms was positively related to the listing requirements of the AltX and the B-BBEE score performance of these firms. Besides, it must be noted that if the B-BBEE score becomes the regressand it only impacts positively on the turnover or total revenue, goodwill, salaries and wages, as well as the operating profit/loss of the JSE's AltX listed firms, however, it negatively impacts on value added and the patents and trademarks of registered companies, *ceteris paribus*.

Lastly, the methodological objectives of this study were achieved through the use of a pragmatic paradigm to illustrate the impact of the JSE's AltX on listed firm's performance and entrepreneurship levels in South Africa. Combining both quantitative and qualitative approaches via the instrumentality of a mixed methods ensured the robustness, viability and reliability of both the findings and conclusions of this study. More so, the rigorous application of MLM in the analysis phase of the study and case study analysis helped to reinforce the findings from each approach. Expectedly, this led to the development of an integrated process model (i.e. Figure 7.1) for AltX listed firms as well as for intending SMEs that might want to join the lower bourse.

## **7.5 THE EMPIRICAL RESEARCH**

As mentioned earlier, this study was conducted using the pragmatism philosophical stance. A deductive reasoning approach was as well employed throughout the entire study. This is because even though mix methods research uses abduction to come to its conclusions, in practise, it usually leans towards either an inductive or a deductive reasoning approach. Consequently, the researcher had to carry out a quantitative study (which employed both the survey questionnaire and the secondary data analysis) and a qualitative study (which employed a semi-structured case study interview). Similarly, the theoretical model and the conceptual framework was used by the researcher to operationalise this research. Thus, the researcher had to deconstruct and dissect the problem statements, the research questions, objectives, as well as the research hypotheses as a stepping stone to conduct the variable identification procedure for this study.

In addition, the unit of analysis for this current study was the JSE's AltX listed firms, while the target participants (i.e. respondents and interviewees) were the JSE's AltX listed companies' CEOs/directors/TMT members. Furthermore, a mixed research design was implemented, in order to obtain a robust and balanced information that has in-depth ramifications in breadth and depth with thick and rich descriptions about the phenomenon. More so, a quantitative survey with self-managed questionnaire was administered to randomly selected JSE's AltX listed firm's CEOs/directors/TMT members (by mail or online). Meanwhile, the survey was complemented by semi-structured case study interviews. Also, 60 JSE's AltX listed companies' CEOs/directors/TMT members were selected as participants/respondents for this study (with 80% response rate). While, 10 selected JSE's AltX listed firm's CEOs/directors/TMT members were selected as participants in the follow-up semi-structured case study interview. In order to allow spontaneous comprehension, all the vital survey questionnaire forms and the interview protocol are attached in the Appendix section of this thesis.

Furthermore, although not all of the demographic information of the respondents were used in the empirical analysis, some important demographic data of the participants were identified and presented in the frequencies statistics information section. Location and sector were used as level 3 and level 2 variables in the multi-level mixed effects equation, respectively. Correspondingly, the secondary data variable information was presented in the frequencies statistics table. However, the number of SMMEs in South Africa and the number of the JSE's AltX listed firms were used as level 3 and level 2 variables in the multi-level mixed effects equation, respectively. More so, the quantitative data were coded, cleaned, transformed and analysed with aid of the statistical software package – IBM SPSS Statistics for windows version 27 (in Chapter 6). Equally, the researcher employed thematic analysis (via word count and thematic frequencies), methodological triangulation, as well as a case-by-case descriptive narration to make sense of the qualitative interview data.

In conclusion, this current study was conducted in order to determine the impact that the JSE's AltX has on listed firm's performance and entrepreneurship levels in South Africa. The ensuing results and findings from this research emphasised that firms that are listed on the JSE's AltX are more likely to perform better than their unlisted peers (i.e. SMEs). Also, the unprecedented performance of the listed firms on the JSE's AltX is positively associated with the level of entrepreneurship in South Africa. Just as, their rising share capitalisation levels increases the likelihood of the expansion of these companies into both local and foreign markets. Besides, it was observed that higher compliance requirements for listing on the AltX led to improvement in quoted firms B-BBEE performance score, which is good (Mzilikazi, 2015; BEE Navigator, 2018; Siwela, 2020). However, the B-BBEE score of quoted firms, paradoxically, was also found to be a costly to obtain, fraught with corruption and forgery, necessitating further probes to justify its intent and contribution to South Africa's emerging post-Apartheid economy (Mokgobinyane, 2017; Pike, Puchert, and Chinyamurindi, 2018). Based on the above anecdotal perspective of this current study, the ensuing sections are fixated on unravelling the discussion of the results and findings as enumerated in Chapter 6 of this research.

## 7.6 TEST OF HYPOTHESIS: EMPIRICAL AND QUALITATIVE ANALYSIS

**Table 7.1 Results of the tests of hypotheses**

Tests	Questionnaire survey	Secondary data	Interview case study
Hypothesis 1	Supported	Supported	Partially Supported
Hypothesis 2	Supported	Partially Supported	Partially Supported
Hypothesis 3	Supported	Supported	Supported
Hypothesis 4	Supported	Partially Supported	Supported

Due to the inconsistencies in previous studies, the researcher adopted a pragmatic research philosophy. The use of pragmatism research paradigm implies that there is a reliance on interpositions, interactions, and their effect in multiple contexts throughout this research inquiry. In addition, the triangulation of both QUAN and QUAL research approach implies that various sources of data were used in the analysis. The primary data collected/tested/analysed comprised of the survey questionnaire [QUAN] and the semi-structured interview [QUAL]. However, the secondary data [QUAN] was obtained from various relevant databases. Notwithstanding the sources of data, all the hypotheses were either fully or partially supported (as indicated in Table 7.1).

### 7.6.1 TEST OF HYPOTHESIS 1: EMPIRICAL AND QUALITATIVE ANALYSIS

The accepted alternate Hypothesis 1 of this study is that “*Firms that are listed on the JSE’s AltX are more likely to perform better than unlisted SMEs*”. The MLM equation that tested the questionnaire survey data and the secondary data for Hypothesis 1 was fully supported, but the semi-structured case study interview partially supported this postulation. The most robust survey response MLM equation using the *deviance* statistics measurements (i.e. Model 5) divulged that registering on the lower bourse helped to improve company performance. Also, listing increased the level of media publicity and raised the profile of listed firms both locally and internationally. However, based on the respondent’s judgement about listing on the AltX, neither did it really facilitate the growth of these company’s revenue base nor enhance their level of firm profitability due to various issues. Also, it was observed that about 100% of the variation in the dataset occurred within-sectors-between-the JSE’s AltX variables at Level 1. Similarly, the most robust secondary data MLM equation using the *deviance* statistics measurements (i.e. Model 2) indicated that the AltX market capitalisation, total number of employed personnel, foreign assets, as well as the total equity and liabilities of the JSE’s AltX listed firms were positively linked with improved firm performance. On the other hand, delistings from the lower bourse, goodwill, operating profit and loss, transfers to the Main Board, and value added were negatively associated with firm performance. Likewise, the JSE’s AltX impact assessment by interviewees revealed that listing boosted the confidence level of the management and also improved their

corporate profile. It also increased their loan amount and profits, and most of all, assisted in securing a major investor. However, it was costly, pressurised the management, and led to the falsification of records, as well as caused performance decline, and also led to more corporate governance compliance requirements.

### **7.6.2 TEST OF HYPOTHESIS 2: EMPIRICAL AND QUALITATIVE ANALYSIS**

The accepted alternate Hypothesis 2 of this study is that “*The unprecedented performance of the listed firms on the JSE’s AltX is positively associated with the level of entrepreneurship in South Africa*”. The MLM equation that tested the questionnaire survey data for Hypothesis 2 was fully supported, but that of the secondary data and the semi-structured case study interview was partially supported. The most robust survey response MLM equation using the *deviance* statistics measurements (i.e. Model 3) divulged that SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa. Also, registering on the junior exchange encouraged entrepreneurial risk taking, and increased business confidence levels. Just as, firm listing motivated entrepreneurs, since it created a high energy environment, where ideation thrives iteratively. Furthermore, it was observed that about 100% of the variation in the dataset occurred within-sectors-between-the JSE’s AltX variables at Level 1. Similarly, the most robust secondary data MLM equation using the *deviance* statistics measurements (i.e. Model 2) indicated that the turnover, AltX market capitalisation, the total investments and loans, as well as the earnings yield of the JSE’s AltX listed firms were positively linked with the level of entrepreneurship in South Africa. On the other hand, the TEA Rate of South Africa, total equity and liabilities, value added, ROA, foreign assets, and the current ratio were negatively associated with the level of entrepreneurship in South Africa. More so, there was evidence of significant variation caused by the number of the JSE’s AltX listed companies at Level 2. Likewise, the JSE’s AltX impact assessment by interviewees revealed that company listing had a mix effect on the level of entrepreneurship in South Africa. Despite the fact that some of the participants had a positive stance on this phenomenon, many of them also had a gloomy perception of its impact on entrepreneurship.

### **7.6.3 TEST OF HYPOTHESIS 3: EMPIRICAL AND QUALITATIVE ANALYSIS**

The accepted alternate Hypothesis 3 of this study is that “*The rising share capitalisation of the listed firms on the AltX increases the likelihood of these companies’ expansion*”. The MLM equation that tested the questionnaire survey data and the secondary data for Hypothesis 3 was fully supported, just like the semi-structured case study interview was also fully supported. More so, the most robust survey response MLM equation using the *deviance* statistics measurements (i.e. Model 3) revealed that registering on the AltX enabled



listed firms to gain international exposure, and it also helped them to consolidate their industry position. However, the corporate bonds and equities sold by these listed firms on the AltX did not guaranty the long-term sustainability of their business. Also, it was observed that about 100% of the variation in the dataset occurred within-sectors-between-the JSE's AltX variables at Level 1. Similarly, the most robust secondary data MLM equation using the *deviance* statistics measurements (i.e. Model 2) indicated that the AltX market capitalisation, foreign assets, foreign liabilities, quick ratio and the ROA of the JSE's AltX listed firms were positively linked with improved share capitalisation and firm expansion. On the other hand, the earnings yield, the total equity and liabilities, as well as the turnover or revenue of these companies were negatively associated with improved share capitalisation and firm expansion. Interestingly, there was evidence of significant variation caused by the number of the JSE's AltX listed companies at Level 2. Likewise, the JSE's AltX impact assessment by interviewees revealed that rising share capitalisation of the listed firms on the AltX led to a high yield but with lower multiples, higher ROE, JVs and acquisitions, reduced share price, was beneficial for lending, led to share ownership dilution, debt reduction (or lower gearing), more capital disbursement and risk diversification, and it also led to growth and economic development, which was good.

#### **7.6.4 TEST OF HYPOTHESIS 4: EMPIRICAL AND QUALITATIVE ANALYSIS**

The accepted alternate Hypothesis 4 of this study is that "*The higher the compliance requirements for listing on the AltX, the more likely that there would be improvement in quoted firms B-BBEE performance score*". Furthermore, the MLM equation that tested the questionnaire survey data for Hypothesis 4 was fully supported. Just as the semi-structured case study interview was fully supported too. However, that of the secondary data partially supported this postulation. More so, the most robust survey response MLM equation using the *deviance* statistics measurements (i.e. Model 2) indicated that the implementation of good governance systems like the B-BBEE by listed firms made them more attractive to stakeholders. Also, it was observed that about 100% of the variation in the dataset occurred within-sectors-between-the JSE's AltX variables at Level 1. Similarly, the most robust secondary data MLM equation using the *deviance* statistics measurements (i.e. Model 4A) revealed that the B-BBEE composite score, the profit after interest and tax, the value of transactions, patents and trademarks, as well as the ROA of the JSE's AltX listed firms were positively linked with higher compliance requirements and improvements in quoted firms B-BBEE performance score. Nevertheless, the Ebitda, goodwill and the operating profit and loss of the JSE's AltX listed firms were negatively related with higher compliance requirements and improvements in quoted firms B-BBEE performance score, *ceteris paribus*. In

reverse, when the B-BBEE composite score becomes the regressand (as in Model 2 which is the most robust MLM equation for Hypothesis 4B) the rate of turnover or revenue, goodwill, salaries and wages of employees, as well as the operating profit and loss of the JSE's AltX listed firms becomes positively associated with firm performance. On the other hand, the value added and patents and trademarks become negatively linked with the performance of registered firms on the lower bourse, which is an interesting finding in this study. Likewise, the JSE's AltX impact assessment by interviewees revealed that the JSE's AltX compliance requirements on the B-BBEE was risky and positive, brought equity and prestige to these firms, as well as led to accountability, more government contracts/tendering, better governance and positive KPIs, despite its downside of being costly to implement, fostering corruption, fronting and elite sharing by both government and company stakeholders.

### 7.7 AN INTEGRATED PROCESS MODEL FOR ALT X LISTED FIRMS

Based on the aforementioned quantitative and qualitative findings of this study, an integrated process model for the JSE's AltX listed firms and intending firms that might want to list on the lower bourse is presented in Figure 7.1.

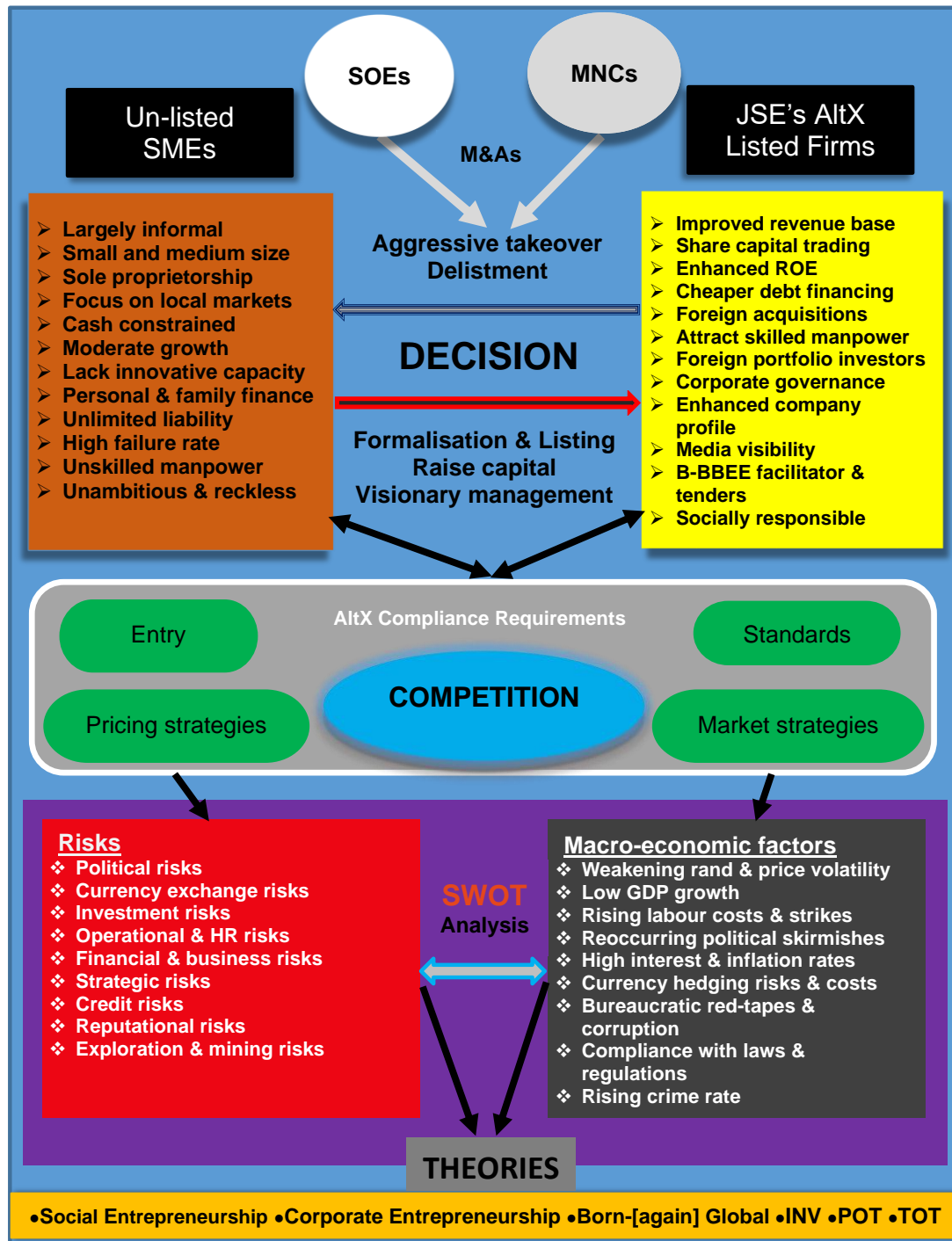


Figure 7.1: An Integrated Model for the JSE's AltX Listed Firms & SMEs (Source: Authors' compilation)

This integrated model sheds light on the complex web of operations that occurs on the JSE's AltX by offering new perspectives that improves our understanding about what happens in a listed environment. From the research findings, the proposed model for this study was able to establish a link between theory and the empirical results from this study. As a matter of fact, the qualitative analysis clearly points out that various risk and macro-economic factors confront both listed and intending SMEs that might want to list on the JSE's AltX. Therefore, a myriad of factors, most especially competition-driven ones could either trigger, postpone or revise the decision to list, while aggressive takeovers could also lead to voluntary delisting, *ceteris paribus*. In addition, the model clearly articulates the advantages of joining the lower bourse in relation to the militating factors that impact on the performance of these firms and the level of entrepreneurship in South Africa. Firstly, the motivating factor for listing on the junior board are numerous (Heerden, 2015; Bosma et al., 2020). Be it as a result of the saturation of the domestic market, or as a result of the need to diversify the products and sales market of these firms due to the country risks that abound in South Africa. Likewise, listing can be also a mitigating factor for local procedures and compliance requirements or even as a strategy to meet-up with foreign standards and regulation, *ceteris paribus*.

Besides, one of the key driving forces that might make unlisted SMEs to want to consider listing on the JSE's AltX is that their business is largely informal with a small and medium size, their company is either a sole proprietorship or partnership business with all its limitations, they have an orientation towards local markets, they are cash constrained, their business have moderate growth rate, they lack the innovative capacity to take the business to the highest level of success, finances always come from personal savings and loans, as well as from family and friends support (Bosma and Kelley, 2019; Bosma et al., 2020; Bowmaker-Falconer and Herrington, 2020). More so, these kinds of businesses may have unlimited liability that extends beyond the business collateral, their business have a high failure rate, lack skilled personnel to manage its resources, and the owners are unambitious and reckless with the company finances among other things.

Secondly, some companies might want to list or remain listed on the lower bourse because they want to formalise their business operations with a visionary management, and also raise capital for their business expansion within a short, medium and long-term period of time, in line with their objectives. Furthermore, listing on the JSE's AltX can lead to improved revenue base and profitability, share capital trading, enhanced ROE, cheaper debt financing from banks and other sponsors, aid the acquisition of foreign firms, lure skilled human capital, attract foreign portfolio investors, contribute to an enhanced corporate governance regime and company profile. Also, it helps to generate

media buzz, facilitate B-BBEE transactions, enable the firm to participate in preferential procurement tenders and contracts of the Republic of South Africa, as well as contribute to a socially responsible and sustainable business ecosystem (Mzilikazi, 2015; Mokgobinyane, 2017; BEE Navigator, 2018; Pike, Puchert, and Chinyamurindi, 2018; Siwela, 2020). The model clearly supports the existence of stiff competition between local and international firms, having secured favourable capital financing deals, listed firms would then have to concentrate on developing their own core competencies that contributes to their firm-specific advantages over rivals. This can be achieved through social networking that creates opportunities for tacit knowledge and collaborations with both state and non-state actors in the marketplace. From a fundamental perspective, competition can create and limit entry barriers, decide on the best pricing strategies, standardisation and marketing strategies to be employed by these firms. Importantly, export trade zones, clusters, free trade areas, and participation in both local and international chambers of commerce and industry associations, can further expose the products and services of these registered firms to both domestic and foreign buyers, sellers, distributors, retailers etcetera. However, whatever the business expansion strategies to be employed by listed firms it has to be in line with the compliance requirements and public disclosure rules of the JSE's AltX (Cheyne, 2016). Likewise, there is a dire need to build trust with all stakeholders, especially the shareholders, with the spirit of cooperation overshadowing competition, because business is not about building linkages and global value/supply chains only, but also exploring vertical and horizontal cooperation, sharing ideas and services, sharing manufacturing processes and capabilities, sharing digital platforms and tools, as well as sharing best practices.

Apart from the abovementioned points, the latent entrepreneurial talent of the JSE's AltX listed firms' board/management maybe activated by complex combinations of social and economic considerations while being registered on the lower bourse, especially from a sub-optimal position to peak productivity. According to Robinson (2014) most entrepreneurs share a common trait of perseverance, persistence, determination, commitment, and resilience, despite the fact that most of them struggle with repeated failures. The relevance of business confidence can thus supersede the risky nature of any business undertaking, since the believe in one's capabilities is an important motivator for success. Given that the current macroeconomic environment in South Africa is very turbulent, listed firms need to carry out a detailed SWOT analysis in their area of operation, because the margin between success and failure is very thin, hence, avoiding pitfalls on the way can be absolutely crucial. At the moment, businesses in South Africa suffer from the impact of weakening rand (Astoria, 2016), price and cost volatility, low GDP growth, high interest and inflation rates, rising labour costs and labour union strikes can weigh many businesses down.

Besides, reoccurring political skirmishes, currency hedging risks, bureaucratic red tapes, land reform, persistent high unemployment rate (of about 34 per cent), increasing government size, rising crime rates and corruption adds to a plethora of problems that listed firms in this segment of the economy would encounter head-on (Herrington and Kew, 2018). Equally, it has been observed that macroeconomic risks could trigger other transmission mechanism induced risks such as liquidity risk, as well as capital and stock market portfolio risk etcetera (Herrington, Kew and Mwanga 2017; Bosma et al., 2020).

Even if, the JSE's AltX listed firms were able to contend with endogenous factors, exogenous risks just like macroeconomic factors would still ravage their operations, which might lead to some companies missing set targets or business goals, if not well contained (Miller and Kim, 2017; The Heritage Foundation, 2020). Constant power struggle and political instability weakens the rule of law and the protection of property rights in the country, which negatively impacts on listed firms' performance (Bosma and Kelley, 2019; Bosma et al. 2020). Recent trends indicate that reputational risks could accelerate the passage of new legislation that either regulate or repossess already allocated property rights, which causes exploration and mining risks. There is also the problem of critical skills shortage in South Africa, which might impact negatively on a company's productivity levels. Similarly, inadequate resource allocation, failure to respond well to changes in the competitive business environment can reduce the profitability and viability of these businesses. In the same vein, safety, cost of energy, input costs valuation, information technology risks and the trading environment are typical illustrations of operational risks that negatively affects listed firm's business operations in and outside South Africa. More so, rising business debts leads to cash flow problems and illiquidity, which causes both financial and business risks. These might also arise if compliance to regulations, reporting structures, accounting standards, taxation, foreign currency exposure, interest rate risk and loan covenants (i.e. credit risks), human resources (HR) risks, strategic risks etcetera change negatively over time (Guzman, 2018). Similarly, systemic risks like war, natural disasters, pandemics and business cycles could lead to economic crashes and recession, while unsystematic risks could affect companies that specialise in niche areas during market downturns.

Apart from the abovementioned risks, other risks (i.e. miscellaneous risks) adversely influence the activities of listed firms. This could be as a result of their uninsurability, and might also arise due to labour disputes, invalidation or delay of orders and permits, foreign taxation, climate change activism, infrastructural limitation and health challenges such as the COVID-19 pandemic among others. That said, the risks confronting the JSE's AltX listed firms in and out of South Africa, as well as their unlisted peers/international competition is too

exhaustive to mention in only one study, which is an area for future study that is ignored by policy makers, researchers and practitioners to their own peril. The JSE's AltX via their top-notch corporate governance standards would be able to detect any of these risks easily, because it is a subject of public disclosure in their annual statements, which must be vetted by the company board, accountants and auditors yearly. Consequently, most of the business decisions and strategic choices to be made needs to be well thought-out. That is the reason why in the model specified above, a rational and targeted approach can be implemented using relevant theories such as social and corporate entrepreneurship theories, international new ventures (INVs), born-global and born-again global international entrepreneurship theories (Lakew, 2015), as well as capital market theories and models such as POT and TOT – as discussed in the preceding chapters of this study (Modigliani and Miller, 1958: 1963; Tarver, 2015; Bukalska, 2019; Agyei, Sun and Abrokwah, 2020). No matter what, in times of tough strategic choices, decisions must be made. Whether it is to ward off, repel or beat back an aggressive takeover bid by a SOE, MNC or another JSE listed or foreign listed entity, or to approve it as an exit strategy by the founders/owners/majority shareholders of the company or even to delist the company from the exchange (in order to prevent it from happening), the recommended integrated model for this study captures this all, for the greater good of companies that are listed on the JSE's AltX, as well as for intending SME's that might want to join the lower bourse.

## **7.8 DISCUSSION**

In this study, the researcher examined the impact of listing on the JSE's AltX on firm performance and entrepreneurship levels in South Africa. From the above-mentioned findings, it is quite clear that firms that are listed on the JSE's AltX are more likely to perform better than unlisted SMEs. Also, it was observed that the unprecedented performance of these firms is positively associated with the level of entrepreneurship in South Africa, because it inspired other entrepreneurs to embrace formalisation, as well as improve company growth. Despite how difficult this could be, rising share capitalisation of listed firms on the AltX significantly increased the likelihood of these companies' expansion both locally and internationally. Concurrently, higher JSE's AltX compliance requirements led to improvements in quoted firms B-BBEE performance score. However, the B-BBEE score was solely responsible for higher rates of turnover or revenue, goodwill, higher salaries and wages of employees, as well as the improved operating profit and loss positions in these firms, which is in line with the objectives of the B-BBEE (Mzilikazi, 2015; BEE Navigator, 2018; Siwela, 2020). Besides, it came at a cost that reduced the value adding capacity of these firms, and their innovative capacity as represented by lower valuation figures of their patents and trademarks (Mokgobinyane, 2017). The reason for

this is not farfetched, because the link between B-BBEE compliance and the preferential procurement regulation for government tenders/contracts was high and/or legal binding. Consequently, it led to BEE fronting and elite sharing, as well as fostered a high rate of corruption by both government and company stakeholders (Pike, Puchert, and Chinyamurindi, 2018).

### **7.8.1 THE PHILOSOPHICAL DIALOGUE**

In line with the triple-loop learning construct as designed by Olivier Serrat (2017), fundamental questions such as “*Are we doing things right?*”, “*Are we doing the right things?*” and “*How do we decide what is right?*” can be answered by the JSE’s AltX listed firms. Also, as a compliance requirement (facilitated by complete learning), listed firms are therefore expected to integrate the complex business environment challenges like the B-BBEE requirements as well as the need to provide employment for the teeming population as a motivating factor that drives corporate entrepreneurship. Without which achieving their broader industry goals and that of the nation, as stipulated in the NDP 2030 document becomes impossible to accomplish. Concomitantly, un-learning past racial prejudice, and re-learning how to transform the economy can be said to be radically sufficient when exploring contentious issues like social justice, wealth redistribution and sustainability, because these societal problems are open to different interpretations. Moreover, listing on an exchange is a capitalist endeavour, nevertheless, putting business (and/or profits) before people, the environment and societal issues can lead to conflicts, which can cause significant losses, business closure and even business relocation.

### **7.8.2 THE JSE’S ALT X IMPACT DISCOURSE**

One of the main reasons of establishing the JSE’s AltX was to facilitate BEE transactions. This is because most black businessmen did not have the capital, business acumen and savviness to participate on the Main Board. However, the JSE’s decision to act ethically and comply with the new BEE legislation gave rise to the AltX and also spearheaded the increased participation of blacks on the lower bourse. So, the JSE’s AltX can therefore be referred to as a nursery where black businesses grow, before transferring to the Main Board, notwithstanding the fact that it is an open exchange for companies and investors alike. This study contributes to the broader literature on the JSE’s AltX, entrepreneurship, entrepreneurial financing and small business development theory with a rich and nuanced, yet diverse view of this phenomenon. Prior studies focused on the economic and/or financial performance of the JSE’s AltX, leaving a huge gap in this area. In addition, this study extends the finding of Mashaba (2014), where he laid bare that there is an average 3-years post-IPO positive abnormal initial return on the JSE AltX. Since, apart from improving a company’s financial performance, this study



provides important insights such as the improved media visibility/publicity that listing brings, which also raises the profile of quoted firms both locally and internationally with its attendant positive implications. This study also extends the current literature because it stipulates that the JSE's AltX market capitalisation, the total number of employed personnel, the foreign assets of listed firms, as well as the total equity and liabilities of these firms were positively linked with improved firm performance. Even though, conversely, delistings from the lower bourse, company goodwill, operating profit and loss, transfers to the Main Board, and value added were negatively associated with firm performance.

### **7.8.3 THEORETICAL DIALOGUE**

In addition, where information asymmetry abounds, this study was able to shed more light about the impact of the TOT, POT and their dynamic varieties to these firms as emphasised in capital market finance theory. In fact, listing assisted many companies to increase their bank loan amount and profits, and most of all, assisted in securing a major investor. However, it was costly and pressurised the management to do all sorts of things. Lest we forget, the compounding problem of finance makes SMEs to use ideas from these theories to leverage on their corporate financial portfolio via a critical path that yields optimum profit from a short to long-term period (Modigliani and Miller, 1958: 1963; Tarver, 2015; Bukalska, 2019; Agyei, Sun and Abrokwah, 2020). Modigliani and Miller (1958: 1963) posit that firms are motivated to use debt rather than equity instruments because debt payments are tax deductible and less risky in the short run. However, in the long run it becomes more expensive thereby necessitating a mixture of both instruments, based on the WACC – i.e. cost of capital (Tarver, 2015). This study reinforces this assumption with empirical justification. Interestingly, firm location or the number of SMMEs in South Africa was not a countervailing factor limiting the ability of these firms to secure capital, and neither did it crowd out investors/lenders too. Without doubt, rising share capitalisation on the JSE's AltX increases the likelihood of these listed companies' expansion. This research deepens an understanding of the micro-foundations of this phenomenon to the extent that a theoretical model and an operationalised conceptual framework was developed for this study to increase comprehension, particularly in areas where little or no studies have been conducted before. Thus, adding to new knowledge in this field of study. It was observed that listing on the AltX enabled SMEs to gain international exposure and also consolidate their industry position. However, the corporate bonds and equities sold by these listed firms on the AltX did not guaranty the long-term sustainability or profitability of their business – which is a function of their managerial talent and competence.

#### 7.8.4 DISCUSSION ABOUT THE ALT X PERFORMANCE INDICATORS

Furthermore, in this study, a mix of both sectoral and the JSE's AltX variable indicators was found to be responsible for variations in listed firm outcomes over time. Inextricably linked to this proposition was the fact that the JSE's AltX market capitalisation, foreign assets, foreign liabilities, quick ratio and the ROA of listed firms were positively linked with improved share capitalisation and an aggressive company expansion strategy. Interestingly, increased share capitalisation contributed to a lower gearing ratio for listed firms, since the amount of equity needed to pay outstanding debts and finance reoccurring pecuniary obligations became low. This made the listed firms on the lower bourse to become more attractive to banks' credit facilities, increasing opportunities for the use of debt/loan in relation to equity to finance their business operations. More so, the financial stability and/or leverage position of these companies was crucial in keeping them as going concerns using their share capital as a form of collateral for loans. Nevertheless, this led to higher gearing and financial distress, or even bankruptcy and business closure, if not well managed by the financial managers/accountants of these firms. This is consistent with the postulations concerning the POT and TOT, in line with capital market financing theory (Bukalska, 2019; Agyei, Sun and Abrokwah, 2020).

The empirical findings showcased in this study therefore reinforces existing literature contributions that the quick ratio and the ROA of the JSE's AltX listed firms was directly related to their share capitalisation levels and firm expansion. That said, the foreign assets and liabilities was also link with rising share capitalisation and company expansion both locally and internationally, which must not be taken for granted. Matter-of-factly, the 2008/2009 financial crises significantly impacted on listed firms' operations because they were exposed to foreign capital and currency/market risk simultaneously. This is an interesting finding in this study, because it was observed that about 80% of the market capitalisation of the JSE's AltX was secured from foreign portfolio investors. It therefore becomes sacrosanct that (local or black) investors in South Africa should be encouraged to either take up entrepreneurship as a career or invest in listed firm's operations, so as to reduce the nation's exposure to global shocks. Even if it means that they are being granted tax exempt status for the first 5 years of operation. On the other hand, efforts should be made by the JSE's AltX listed companies to improve their earnings yield, total equity and liabilities, as well as the turnover or revenue of these firms because they were negatively associated with improved share capitalisation and firm expansion. Likewise, there was evidence of significant variation caused by the number of the JSE's AltX listed companies. In this study, the researcher found that increased share capitalisation on the JSE's AltX triggered high yield but with

lower multiples, led to higher ROE, JVs and acquisitions, reduced share price, was beneficial for lending, led to share ownership dilution, debt reduction (or lower gearing), more capital disbursement and risk diversification, and it also led to company growth and economic development, which was good.

Going further, another intriguing finding in this study was that the unprecedented performance of the JSE's AltX listed firms is positively associated with the level of entrepreneurship in South Africa. Expectedly, this helped to transform SMEs from either sole proprietorships or partnerships to a more robust limited liability company structure. This allowed corporate entrepreneurship i.e. the development of new business ideas and opportunities within large [formalised] and established corporations to thrive on the AltX. According to Burns (2013) it also enhanced the ability of these large organisations to explore commercial opportunities, thus in the process develop structural and strategic capability to innovate, and to manage actionable change through corporate venturing, intrapreneurship and entrepreneurial transformation. This was consistent with the literature studies carried out in Chapter 2, 3 and 4 of this thesis. Family entrepreneurship was also found to be very prominent on the lower bourse, for instance, W.G. Wearne Group of Companies has been a family business run by generations of the owner since 1910. Similarly, social entrepreneurship was found to be operational too on the lower bourse, since the application of practical, innovative and sustainable approaches to benefit society in general was implemented by some notable AltX listed companies like Mine Restoration Investments Limited and Interwaste Holdings Limited in South Africa. In the same vein, almost all the JSE's AltX listed firms were born global or global start-up firms from the onset because they had a global orientation. According to Lakew (2015) the network approach is premised on the fact that successful internationalisation is dependent on SMEs developing networks and relationships to facilitate this process. One way to exploit social networks is for the business executives of SMEs to join local chambers of commerce. As posited by Hynes (2010) the stage approach can also be used in the internationalisation process of listed SMEs, since it occurs gradually in markets with close proximity to the domestic market due to cultural and distance barriers, for example the SADC and African markets. These enabled listed firms to exploit strategic competitive advantage from the use of resources, networks and the sale of outputs in multiple countries simultaneously.

Lastly, this study extends entrepreneurship research by theorising and empirically reinforcing that SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa. And also, firm listing encouraged entrepreneurial risk taking, as well as boosted business confidence levels, which really motivated entrepreneurs via the creation of a high energy

environment, where ideation thrived iteratively. Furthermore, it was observed that variations in firm performance could occur within sectors triggered by the JSE's AltX variable parameters. Also, the turnover or revenue levels, the JSE's AltX market capitalisation, the total investments and loans, as well as the earnings yield of listed firms were positively linked with the level of entrepreneurship in South Africa. On the other hand, the TEA Rate of South Africa (which is mostly comprised of low-level entrepreneurship), the total equity and liabilities (indicating a crowding-out effect), value added, ROA, foreign assets, and the current ratio were negatively associated with the level of entrepreneurship in South Africa. More so, there was evidence of significant variation caused by the number of the JSE's AltX listed companies. Likewise, the JSE's AltX impact assessment revealed a mix effect on the level of entrepreneurship in South Africa. Despite the fact that listing had a positive impact on this phenomenon, there were also problems associated with foreign competitors and/or investors neutralising its impact on entrepreneurship. This research therefore extends our understanding of the impact of listing on the JSE's AltX on firm performance and entrepreneurship levels in South Africa, by offering more pulverised insights about this phenomenon.

## **7.9 CONCLUSION**

From the foregoing discussion, it is quite obvious that the research objectives of this study was achieved. Not only was the impact of listing on the JSE's AltX linked with improved performance, its positive effect on entrepreneurship levels in South Africa, share capitalisation levels and the B-BBEE score rating of listed companies were identified to be vital for the growth of local companies. Likewise, inferential statistics were obtained to support the significance of these findings, in order to reinforce literature studies/claims. Similarly, the net job creating capability of these registered firms was also observed to be associated with their positive performance, which is good, considering the goal of the NDP 2030 agenda to provide jobs, alleviate poverty, and also facilitate national cohesion through racial and economic equity. Further, the augmentation effect of this phenomenon is even larger when its multiplier effect is related to sustainable economic growth and development. Consequently, the main conclusions of this study are characterised under the following sub-headings: managerial implications, policy implications and contributions to new knowledge.

### **7.9.1 MANAGERIAL IMPLICATIONS**

Listing poses enormous challenges on the management and board of registered firms on the JSE's AltX. Right from when the decision to list is made by these companies to the point when the JSE's AltX directors' induction training commences, the TMT members should put together a strong team that

can handle the burdensome compliance and public disclosure requirements of the lower bourse. Once, a company is listed, it is certain that within six months the company's interim reports should be ready, and within 12 months, their final report and annual statements must be ready for onward dissemination on the JSE SENS portal or else, they are technically suspended from the exchange (JSE, 2019). Furthermore, the JSE's AltX corporate governance provisions requires that listed firms should employ the services of a company secretary, banker, auditor, attorney, transfer secretary, and an investor relations consultant for this process to be seamless. As enumerated in the findings, for these firms to raise a considerable large amount of capital, they would require a start-up cost and capital of between 1-2 billion ZAR rands based on the past experiences of listed companies on the JSE's AltX. Correspondingly, listed companies should adopt a global orientation, in line with their strategic objectives. From past experiences, most companies' shares are over-subscribed at the point of listing, however, due to the immaturity of the company's board of directors and founders these funds are mismanaged causing significant reputational damage to these firms in the long-run. Thus, after raising capital, decisions like making acquisitions and JVs must be well-thought out, if not there might be a danger of a high gearing undermining the liquidity and profitability positions of these firms, which may result to business rescue, closure and/or takeover. Equally, listed companies should first of all expand their business operation before entering new lines of business that they know nothing about (which might be costly to operate) for the sake of diversification. In fact, most of the delistings and business closure was as a result of management making the wrong acquisition. For instance, successful micro-finance businesses wanted to diversify into real estate and vice versa, which eventually led to their collapse. Also, value adding services should be implemented in these firms in order to integrate technological processes in their entire value-chain, especially during the post COVID-19 recovery period when sales and global trade it is at its lowest points in a decade. More so, listed firms should evaluate various crucial strategic choices and invest in R&D as they venture into diverse market segments where competition is rife locally, regionally and globally.

### **7.9.2 POLICY IMPLICATIONS**

Given that the NDP envisions that by creating 11 million jobs, unemployment rate would be reduced to 6 per cent by 2030 in South Africa, the ANC government needs to brace up to the challenges of transforming this plan into reality. Using a hit-and-miss approach could led to untainted brinkmanship. As a matter of fact, the current economic fundamentals of South Africa are not very promising, which has resulted to an unpleasant economic environment for the listed firms on the JSE' AltX. From a peak of 77 companies being listed on the

lower bourse in 2008, henceforward, after the 2008/2009 financial crises fewer firms have been able to either list or remain listed on the junior exchange. This is coupled with the current political and corruption crises in South Africa, which has dwindled investors and business confidence in the country, further causing the number of registered firms on the AltX to plummet to an all-time low of 42. The new evidence provided in this study obviates the need for any further enquiries. South African politicians may be oblivious of the damage they have caused to the economic system, consequently, there is need for political re-orientation. Finger pointing cannot solve the country's problems but further aggravate it, nevertheless the commitment to achieve economic progress will. By working together and cooperating despite racial differences the current recession can be turned into an economic transformation boom. At the moment, interest rates, inflation rates and currency exchange rates pose significant risks to listed firms. Hence, a robust monetary and fiscal policy framework needs to be put in place side-by-side the NDP 2030 agenda. The use of fiat or faits accomplis by the ANC led government should be avoided, in order to allow consultations to take place before major decisions are arrived at. Despite the benefits of the B-BBEE legislation, it also has its own downside. SMEs are not expected to comply at the moment, but all listed firms are expected to do so notwithstanding their size, which is not supposed to be so. There should be a tax dispensation for SMEs and foreign revenue attracting businesses that assist in raising the economic potentials of the nation. A tax rate of 15 per cent which is in line with the new global tax rate should be implemented with a caveat that the remaining portion of this taxable revenue must be used in employment generation activities in the country – in line with the B-BBEE regulation. This would make South Africa the preferred investment destination in Africa. Thus, lure back investments from tax havens across the world. This is an emerging opportunity that the nation stands to benefit from [and can tap from with minimal costs].

### **7.9.3 CONTRIBUTIONS TO NEW KNOWLEDGE**

Literature studies are awash with details/data about the activities of stock exchanges across the world, but few of these studies narrow their lens on the operations of this exchange, from the perspective of listed firms. This study therefore adopts a rational, specific and targeted approach that to the best of the researchers' knowledge is not common in South Africa. The simplified, yet thorough approach employed in this research can be readily accessed by industry practitioners, policy makers and researchers with minimal knowledge of the inner workings of the operational processes of the JSE's AltX. And also save these listed firms significant costs while trying to list or as listed firms on the JSE's AltX. More so, the findings of this study contribute to an enhanced understanding of the impact of the JSE's AltX on listed firm's performance and

entrepreneurship levels in South Africa, and also extend the literature inferences on this phenomenon synchronously. Specifically, this study contributes to the existing literature on the JSE's AltX by:

- ✚ Identifying the operational processes of the JSE's AltX.
- ✚ Identifying the entrepreneurship theory and processes that capture, as well as incorporate the idea that the JSE's AltX capital market financing contributes significantly to broader industry disruption.
- ✚ Identifying the advantages and disadvantages of the JSE's AltX.
- ✚ Quantitatively [and qualitatively] identifying and describing the activities of the JSE's AltX listed firms using theory-based empirical research.
- ✚ Identifying the entrepreneurial ecosystem in South Africa.
- ✚ Identifying the factors contributing to the success of SMEs in South Africa.
- ✚ Identifying the patterns, dimensions and scope of the JSE's AltX listed firm's operations.
- ✚ Identifying government's intervention in South Africa's SME sector.
- ✚ Identifying the problems confronting SMEs in South Africa.
- ✚ Identifying the theoretical evidence supporting capital market listing.
- ✚ Identifying the risks confronting the JSE's AltX listed companies.
- ✚ Identifying the driving forces that foster and hinder the expansion of the JSE's AltX listed firms.
- ✚ Developing an integrated model that elucidates a rational, specific and targeted approach for the companies that are listed on the JSE's AltX, as well as for intending SMEs that might want to join the lower bourse.

This study debunks the Rostow's stages of economic growth theory which provides a linear growth path for firms and countries. However, new growth theories are supported in this study because listed firms can harness capital, human resources and knowledge to drive economic development in South Africa within a short period of time (Lakew, 2015). In addition, this study also accentuated social entrepreneurship because of the pursuance of the B-BBEE by firms in compliance with both the JSE's requirements and government legislation in this area. Thus, propagating corporate citizenship rather than pure greed for profit over people, which is good for economic equity. In the same vein, this study encourages corporate entrepreneurship instead of the informalisation of SMEs which let them off the tax net. More so, the findings of this study validate INV theories, thus suggesting that firms could rapidly expand within three years, when SMEs are given access to capital. Although the stage theory has been advanced in international entrepreneurship literature, gradual expansion is not what is expected from listing on the AltX, where the attraction

is high growth firms (Ferguson, Henrekson and Johannesson, 2019; Garcia, 2019).

Interestingly, the findings of this study therefore associate higher market capitalisation levels with foreign sales between 2-5 years of listing coupled with listed firms deriving 25 per cent of their income from foreign sources and operating in at least five countries - which applies to almost all listed entities on the exchange. Likewise, firms that achieved limited international success could list to build up domestic market support and then internationalise later on by virtue of being born-again global firms. Furthermore, the findings of this study explain why firms might want to list, building on a hierarchical funding source as enumerated by the POT. As well, the findings of this study reveal why listed firms target optimum capital leverage within a relatively short period of time as specified by the TOT (Bukalska, 2019; Agyei, Sun and Abrokwah, 2020). Lastly, the findings of Hypothesis 4A specifies that although higher B-BBEE score ratings of the JSE's AltX listed firms can lead to improvements in company performance, it could also lead to lower value added, patents and trademarks levels due to the negative impact of preferential procurement as encouraged by the South African government tendering process. This was found by the researcher as well as the qualitative case study interviewees to unintentionally encourage corruption, as exemplified by the state capture claims in the country. This therefore extends the current knowledge in this area, which is a major contribution of this study.

## **7.10 RECOMMENDATIONS**

The main finding of this study is that the JSE's AltX impacts positively on listed firm's performance and the level of entrepreneurship in South Africa. Based on the findings presented in Chapter 6 and the discussions, conclusions and recommendations presented in the current chapter, a well-informed recommendation can be thus made, in order to ameliorate the problematic issues that were disclosed in the findings section of this thesis. Consequently, the recommendations of this study have been categorised into three sections for listed firms, the JSE's AltX, and policy makers, so as to enable them to derive maximum benefits in engaging in this stimulating business endeavour.

From the practical, theoretical and academic recommendations made in this study, many SMMEs would definitely benefit from being listed because they would become fully aware of the benefits and demerits of listing, as well as become aware of the dos and don'ts, which are mostly compliance driven on the exchange. By complying with the JSE's AltX corporate governance requirements, listed firms would be better run, which in the end lead to enhanced revenue and profitability levels. More so, registered firms on the AltX would strategically plan their firm expansion over time in and out of South



Africa, which would also lead to increased corporate visibility and better company performance *ceteris paribus*. Besides, the JSE's AltX disuse of a one-size-fits-all listing procedure would be replaced with a custom-made business-friendly targeted listing approach based on the needs of SMEs, which would remarkably assist them to improve their performance. While, most importantly, policy makers' creation of a one-stop-shop investment portal would streamline the activities of government agencies for the benefit of SMMEs, since it is quite cumbersome to do so under the current bureaucratic macro-environment. All things being equal, the underlisted recommendations would definitely impact positively on the performance of listed SMEs on the JSE's AltX in South Africa.

### **7.10.1 RECOMMENDATIONS FOR LISTED FIRMS**

Firstly, the JSE's AltX listed firms should be prepared from the onset on how to utilise the capital that would be raised on the exchange and also comply with the JSE's AltX on relevant disclosure details for all stakeholders. This is because the clock to the next company annual general meeting (AGM) and the public disclosure of listed firm's annual financial statement begins from day one of listing. It is quite common on the JSE's AltX that companies get suspended when this compliance requirements are not met as and when due. More so, numerous registered entities on the lower bourse have either gone under – on business rescue, bankruptcy proceedings or collapsed entirely because of exposure to subsidiaries that they acquired for the sake of diversification. It is quite common on the exchange that REIT or real estate firms might want to diversify into banking, in order to grant mortgage loans for their customers and clients. However, in the process of acquiring these subsidiaries, the company also inherits re-occurring liabilities, which ends up causing liquidity issues for the entire group of companies, eventually leading to business failure. This trend also applied to microfinance banks attempting to acquire REIT or real estate of property firms. Consequently, the researcher recommends that listed firms should first of all grow organically in areas where they have substantial experience (i.e. vertical or concentric diversification), or buy a minority stake in businesses that are not related to their operations, before growing their stake as the financial situation of those firms improve (i.e. horizontal or conglomerate diversification).

Furthermore, some of the founders, directors and majority shareholders of registered companies were not prepared to lead a larger company, because some of them had planned an exit strategy, as soon as their company shares increased exponentially. This led to insider trading and reckless spending on their part after raising millions or billions of rands from investors'/shareholders' capital or bank loans. For instance, power squabbles on the board led to the resignation of the CEO of ChemSpec after a High Court Judge passed a verdict that he had exaggerated, lied, fabricated and contrived evidence in a case by

a partner firm, making him liable to pay R 3 million, in addition to interests and costs to the shareholding company as damages (IOL, 2010). As if that was not okay, he went further to sue the company he founded for R 609.5 million when it filed for provisional liquidation in 2016, at the same time leaving a trail of debt and hurting many investors financially (Harris, 2016). The researcher therefore recommends that the JSE's AltX conduct periodic expansion and financial training sessions every quarter to enable listed firms to stay focused on their business goals and objectives, as well as inform them of their tremendous responsibility to shareholders and other stakeholders of the company. However, those that fail should not be blacklisted, instead, failure should be viewed as a learning curve for entrepreneurial success, without which innovation lie in comatose. In the case of the ChemSpec CEO, it was his acquisition of a US subsidiary that further worsened the economic situation of the firm. Hence, moral suasion should be given periodically to the management and board of listed firms. While, psychologists and motivational speakers can be used to reinforce their determination to succeed in their entrepreneurial ventures, because the demands of their job schedule can also make them to develop health issues like psychosis, etcetera.

#### **7.10.2 RECOMMENDATIONS FOR THE JSE'S ALT X**

Secondly, the researcher recommends that the JSE's AltX should re-strategise its operational focus, in order to capture the nuances of SMEs. This is because most times due to their size and unstructured nature, they might not be able to cope with the timely submission of accounts or even meet some of the compliance requirements and public disclosures regulations guiding the exchange. Likewise, instead of an outright delisting from the exchange, erring firms can have their shares technically suspended for about 3 years, while they remain listed and also attempt to comply with the JSE regulations. Most especially, the 24 months' time frame granted to SPAC vehicles to acquire both local and foreign firms should be extended to 5 years, due to the complexity of such deals, especially with respect to the approval procedures from both domestic/foreign governments and their mandates. Furthermore, based on the abovementioned points, the JSE should establish its own business incubators and accelerators where it can offer both listed and intending firms start-up support services, mentorship, value chain resources, office space and access to investments. The researcher recommends that the JSE's AltX orientation and search-light should beam towards young firms with an ambition for growth and going global, since the crucial early stage of start-ups (i.e. for born-[going] global and INVs) can be very turbulent. In this fast-paced business environment, entrepreneurs, founders and company boards of directors can be guided on how to develop a robust business plan and pitch it to potential investors, register and brand their businesses, capture market share, confront

market risks, as well as guarantee growth and also secure the necessary funding from banks, venture capitalists and business angels.

### **7.10.3 RECOMMENDATIONS FOR POLICY MAKERS**

Thirdly, given that the main issues confronting the JSE's AltX listed companies was concerned with bureaucratic bottlenecks and the unfavourable macroeconomic environment in South Africa, policy makers are advised to assist in pacifying the entire business ecosystem with business-friendly regulation. Although the B-BBEE regulation contributed to racial economic equity (Leadership Online, 2018) through black ownership (which comprises 6 per cent of the total JSE equity ownership) and representation on the board (which stands at 38 per cent on the boards of the JSE's listed entities), there is need to reappraise the BEE requirements, so as to fit the NDP 2030 Agenda and also be in tune with the economic realities of the nation. Therefore, the researcher recommends that there should be a tax dispensation for rural economy development through tax rebates and exemptions for companies that operate in remote locations, in order to curb rural-urban migration, as well as the "crime-ridden" shanty and satellite towns that it leaves behind its path. From the findings of this study, location was not a determinant factor for favourable business performance in South Africa, hence, the relocation of listed firms to rural areas would spur growth, eliminate poverty and reduce inequality in those areas. In addition, building a united and inclusive economy is not a mean task, it requires an action-oriented planning and execution. The policy makers should strive to create incentives for foreign investors to exploit national resources, instead of driving them out through the expropriation of private assets. Lessons learned from Zimbabwe and Nigeria reveals that such actions would cripple the economy and also, led to the devaluation of the local currency.

Lastly, a one-stop-shop investment portal should be developed by the government of South Africa integrating all the core functions and operational processes of these agencies, in order to facilitate and safeguard a hitch-free transaction for listed firms on the JSE's AltX. At the moment, most of the registered firms on the lower bourse complain that they do not have any information pertaining to the operations of government agencies, and if they have information on MDAs' grant, loans and assistance, they believe these processes are laden with bureaucratic bottlenecks and corruption, which might not be so. Consequently, the DSBD, SEDA, SEFA, DTI, ECIC, NEF, NCR, CIPC, SABS, SANAS, DSI, CSIR and the DHS should link all of their enrolment information together in one portal, so that the JSE's AltX listed firms can adequately exploit the opportunities that lies therein (Chapter 3). Furthermore, all these interventions should key into the AfCFTA where these firms can benefit from the single market, source for raw materials, capital investments and markets without the concomitant barriers to trade. In conclusion, policy

makers should organise corporate advocacy, capacity building workshops and symposia, facilitate trade promotion (via participation in local and international trade fairs and exhibitions), business development, R&D and intermediation in order to support the expansion and development of private enterprise and initiative in South Africa. By so doing, they would encourage a friendly interaction between the JSE's AltX listed firms and various local and international chambers of commerce, business and professional associations, multilateral organisations as well as corporate bodies. This would definitely influence public policy positively, and also promote industry competitiveness for the JSE's AltX listed companies, because the encouragement of a harmonious business environment (i.e. MDAs and the AltX registered businesses seeing each other as partners in progress but not rivals), would incontrovertibly stimulate national productivity and prosperity for all, synchronously.

### **7.11 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

No matter how well-written any research study is, it still has its own limitations. Therefore, this study is not an exception, because despite the significant contribution this study makes to theory, methodological rigour, practise and policy on the JSE's AltX listed firm's activities, its findings are not free from certain limitations. First of all, this study focused on the JSE's AltX listed firms but the unit of analysis was the JSE's AltX listed firm's CEOs/directors/TMT members, an expanded survey sample comprising both the JSE's AltX employees and government MDAs would shed more light on this phenomenon. Consequently, future research should capture this sample frame, if possible. Secondly, the use of secondary can be viewed as been more objective but comes with a problem. Some registered firms falsify their records as evidenced by the Tongaat and Steinhoff saga. More so, no matter the methodological rigour that a researcher adopts, faulty and forged reported records could put results and findings from such studies in limbo, despite the innocence of the researcher about the status of the data, even if it is from a reliable database. Hence, the use of pragmatism research philosophy would ameliorate this deficiency via the combination of both quantitative and qualitative. Thirdly, instead of using cross-sectional data, longitudinal data can be used to conduct studies about this phenomenon given the cyclical nature of the shocks that affect the JSE's AltX.

Fourthly, future research should extend beyond South Africa, across the SADC, Africa or even across continents. This is because alternative exchanges are getting popular globally, and employing pragmatism research philosophy and MLM can bring out a nuanced perspective of this phenomenon worldwide. This could expose cluster effects unique to locations, sectors or industries. Lastly, the very fact that the JSE's AltX is still in its infancy creates a problem of collinearity of datasets because running a model equation with less than 20

years variable data can be problematic, if not skilfully handled by an experienced database analyst. In fact, the researcher was able to ameliorate this gap due to his over a decade and half years' experience as a certified database administrator and analyst. In conclusion, the youthfulness of the JSE's AltX creates opportunities for research in this area. New studies can focus on the impact of tax, profitability ratios and corporate governance on the operations of listed firms, which provides a potentially fruitful avenue and point of departure for future research.

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### Appendix 1 Overview of the methodological steps from the JSE's AltX literature review

Author(s)	Topic	Hypothesis/Question	Methodology	Findings/Contributions
Mlonzi, Kruger and Nthoesane (2010) <b>Conference Paper</b>	Share price reaction to earnings announcement on the JSE-ALT-X	The cumulative average abnormal returns (CAAR) on earnings announcements is significantly different from zero.	This study used capital asset pricing model (CAPM) to calculate the JSE's AltX expected annual returns from 1 January 2009 to 31 December 2009. Furthermore, event study methodology was used to test for abnormal performance.	Evidence from the statistical analysis of the JSE's ALT-X data revealed that there is substantial negative share price reaction to earnings announcements on the ALT-X stock market. The ALT-X also showed the weak-form of market efficiency. More so, share price as a proxy for shareholder value was negatively significant and led to approximately 50% loss of value.
Pelcher (2017) <b>Masters Dissertation</b>	The impact of dividend policy on share price volatility of JSE AltX listed companies	A statistically significant relationship exist between share price volatility and dividend policy – measured by dividend yield and dividend pay-out ratio.	In this research panel data analysis was applied to both the time series and cross-sectional elements of the AltX dataset derived from McGregor BFA from 2010 – 2014. Pooled model was first applied to the dataset followed by a fixed effects model, and then a random effects model. Lastly this led to the selection of a final model.	Share price volatility was found to have a statistically significant and negative relationship with dividend yield, and a statistically insignificant relationship with the dividend pay-out ratio. Furthermore, dividends and capital growth were considered as important elements for shareholders' wealth maximisation in this research. Hence there is need to reduce share price volatility via constant dividend pay-outs to investors.
Beneke (2016) <b>Journal Article</b>	Benchmarking value creation of companies listed on the JSE's AltX	Can value-based management principles be applied in small and medium enterprises (SMEs) to create shareholder wealth; are SMEs able to create value; and, how does SMEs compare when benchmarked against each other?	Value-based management (VBM) was applied as a management approach that maximises long-term shareholder value because of its use of various metrics to determine if wealth was either created or destroyed in listed firms from 2007 – 2012. Also, the researcher benchmarked the wealth creation capabilities of AltX companies via data envelopment analysis (DEA).	The results of this research indicates that a very limited number of companies were deemed efficient in creating value. It was also established that the financial crisis of 2008 and 2009 had a significant negative impact on the AltX listed companies. Due to the exigencies of quantitative data, the researcher recommends that for a future study, a qualitative approach should be employed in determining the value creating capabilities of the AltX listed companies.



<p>Makhabeni (2015)</p> <p><b>Masters Dissertation</b></p>	<p>Comparative efficiency performance of SMEs and other companies listed on JSE-ALT X</p>	<p>Based on the research questions: 1. How efficient is the AltX in pricing SME stocks compared to other stocks? 2. Does the inclusion of SMEs in a portfolio enhances or destruct portfolio performance?</p> <p>This study's hypothesis is that the abnormal returns are significantly different from zero for both SMEs and None-SMEs</p>	<p>In order to test for differences in the behaviour of SME stocks and None-SME stocks, a difference of means test is carried out using the AltX data from April 2006 and December 2013.</p>	<p>The results of this study show that SMEs have positive abnormal returns at the IPO stage and at month 1, while for the months thereafter, SMEs exhibit negative abnormal returns in the short to medium term. None-SMEs behaved differently, for the most parts because these companies had positive abnormal returns during the study period. Furthermore, the test of difference of means for SMEs and None-SMEs showed that in most parts the stock market performance of SMEs underperformed when compared to None-SMEs.</p>
<p>Heerden (2015)</p> <p><b>Masters Dissertation</b></p>	<p>Is the AltX doing what it is supposed to do? An Analysis of the JSE Alternative Exchange</p>	<p>Is the AltX effective in doing what it is supposed to do? Is it providing a platform for smaller companies to raise capital? Is it an effective fledgling exchange, providing a feeding ground for the JSE Main Board? Is it increasing shareholder value and providing adequate liquidity? Does the AltX carry more investment risk than the JSE Main Board or London's AIM?</p>	<p>This study used descriptive statistics to measure and compare risk from a sample consisting of closing prices for the JSE All Share Index, the JSE top 40 Index, The AltX All Share Index and the AIM All Share Index from 1 January 2007 until 31 December 2013. Data was modified to fit the relevant formulas for Standard Deviation, Beta, Value at Risk, Sharpe Ratio and Maximum Draw Down.</p>	<p>This study's main finding is that the AltX does not carry significantly more risk than the JSE Main Board or AIM. However, a longitudinal observation of the AltX reveals that it is creatively assisting high-growth small companies to raise capital, and also providing investors with an opportunity to become shareholders in a listed company. This research concludes that company performance is still based on the individual performance of each company and not dependant on where the company is listed. In fact, the JSE has experienced a great deal more de-listings than listings over the same period of time than the AltX, while, the AltX on the other hand experienced far more listings than de-listings.</p>
<p>Makoko and Muzindutsi (2018)</p>	<p>Modelling Return Volatility in the Main Board and the Alternative</p>	<p>What is the level of volatility spill-over effects between the Main Board and the AltX of the</p>	<p>This study used Generalised AutoRegressive Conditional Heteroscedasticity (GARCH) models (such as ARCH/GARCH, TARCH/GJR-GARCH</p>	<p>This study concludes that the best volatility capturing model for the JSE Main Board was EGARCH; while the best model for the AltX was GARCH (1, 1). The JSE's AltX was found to be more volatile than the Main Board, and there was no spill-over effect</p>

<p><b>Journal Article</b></p>	<p>Exchange of the Johannesburg Stock Exchange: Application of GARCH Models</p>	<p>Johannesburg Stock Exchange?</p>	<p>and EGARCH) to measure the level of volatility within the JSE Main Board and AltX from January 2007 to December 2016.</p>	<p>between the two boards. The findings of this research suggests that investors can minimise risk by diversifying their investment across the two major boards of the JSE.</p>
<p>Ungerer, Gerber and Volschenk (2015)</p> <p><b>Journal Article</b></p>	<p>Managing firm growth: Lessons of success</p>	<p>What are the key considerations that moderate firm success in terms of growth management?</p>	<p>A qualitative research was carried out by means of observation utilising a template analysis format using the JSE's AltX data from 2007 – 2012.</p>	<p>The findings of the research indicated that firms in the information, communication and technology (ICT) sector significantly outperformed the other sectors in terms of profitability, and most successful high growth firms followed a combined growth strategy, which included organic growth, acquisitions and expansion into Africa based on an extensive industry experience/skillsets, top-notch educational qualification and the entrepreneurial experience of their directors.</p>
<p>Mashaba (2014)</p> <p><b>Masters Dissertation</b></p>	<p>The IPO performance of companies listed on the JSE alternative exchange</p>	<p>Newly listed JSE AltX IPOs perform the same as the market after the first day of trade; The returns of JSE AltX IPOs perform the same as the market 1 or 2 or 3 years after listing; The combined returns of JSE AltX IPOs perform the same as the market 1 or 2 or 3 year after listing.</p>	<p>This study utilised event study methodology to analyse IPOs listing data on the JSE's AltX from April 2006 to December 2011.</p>	<p>Available evidence from this study indicates that there is an existence of average positive abnormal initial returns on the JSE AltX, and returns underperformance for the two years following that. The aftermarket returns are then positive 3 years post IPO date. Lastly, combined returns were found to be abnormal and positive throughout the 1, 2 and 3 year periods post IPO.</p>
<p>Shadung (2014)</p>	<p>The impact of an economic recession on the working capital management of small and medium</p>	<p>The average collection period (ACP), inventory turnover in days (ITD), average payment period (APP) and the cash conversion cycle (CCC) impacts on the working capital management (WCM)</p>	<p>This research used a quantitative descriptive approach to analyse the AltX data from 2007 – 2012.</p>	<p>The analysis of the WCM variables pre-, during and post-recession phases indicated that there were no significant changes in WCM that can be attributed to the 2009 economic recession. This was largely attributed to delaying payments to creditors.</p>

<p><b>Masters Dissertation</b></p>	<p>enterprises in South Africa</p>	<p>performance prior to (2007-2008) and during economic recession (2009).</p>		
<p>Kruger (2014)</p> <p><b>Conference Paper</b></p>	<p>Has the transition of AltX-listed companies to the Main Board of the Johannesburg Share Exchange met with success?</p>	<p>Does the AltX-listed companies benefit from migrating to the Main Board?</p>	<p>This research used cumulative average abnormal returns (CAARs) to investigate the impact of market response to share migrations from the AltX to the Main Board from December 2004 to June 2013.</p>	<p>This study finds that the short-term market perceptions of firm listing are positive, and that there is improved liquidity around the migration date and the subsequent quarter. Also, long-term performance in the 52-week period following migrations appears to be slightly negative while the increase in liquidity appears to be sustained in the longer-term. There is also an indication of an inverse relationship between the age of firms and their return on equity (ROE).</p>
<p>Correia and Levinson (2012)</p> <p><b>Conference Paper</b></p>	<p>An analysis of the accuracy of earnings forecasts of companies listing on the Alternative Exchange of South Africa</p>	<p>What is the earnings forecast accuracy of AltX listed companies? What is the earnings forecast bias for AltX listed companies?</p>	<p>This study used the mean and median forecast errors (FE) and absolute forecast errors (AFE) for companies listing on the AltX to test for earnings forecast accuracy and bias from 2003 to 2009.</p>	<p>The findings of this research indicate that the accuracy error for revenue projections is lower for the first year resulting in an understatement of revenue, and higher in the second year resulting in an overstatement of revenue in the second year. This shows how management might not be able to forecast changes in future profit margins.</p>
<p>Harvey (2016)</p>	<p>The long-term performance of failed Initial Public Offerings (IPOs) on the Johannesburg Stock Exchange (JSE)</p>	<p>Did the failure rate of IPOs increase from the first hot market period to the second hot market period? Did the level of underpricing and the long term performance of IPOs in hot market periods change over time? Did company specific characteristics such as age of the company before going public, the initial offer</p>	<p>A quantitative research approach was adopted for the purposes of this study using Market-Adjusted Abnormal Return (MAAR), Buy-and-Hold Abnormal Return (BHAR), Buy-and-Hold Return (BHR) and the JSE All Share Index (ALSI) to explain IPO long-term performance, initial under-pricing and failure from 1996 to 2007.</p>	<p>A significant negative relationship exist between failure and Buy-and-Hold Abnormal Return (BHAR). When considering the board of listing, the AltX proved to have the most company failures as well as the worst long-term performance. With regards to the sector of listing, it was recommended to avoid sectors which experience high volumes of listings. It was also found that companies with a smaller age before listing displayed worse long-term underperformance and were more likely to fail. A minimum of four (4) years of poor returns was observed on the AltX.</p>

<p><b>Masters Dissertation</b></p>		<p>price and the size of the offering (market capitalisation) change significantly from the first hot market period to the second? Did the composition of IPOs change over time in terms of specific sectors as well as the decision regarding listing on the Main Board versus the AltX?</p>		
<p><b>PhD Thesis</b></p>	<p>The role of the JSE ALTX as a platform for sustainability and growth for high growth potential SMEs</p>	<p>Is the JSE AltX a catalyst for growth and sustainability for high growth potential SMEs that are listed on the exchange?</p>	<p>The study employed a quantitative correlational research design to test the relationship between the proxy variables.</p>	<p>The study finds that the JSE's AltX is not a robust platform for achieving sustainability and growth for high growth potential SMEs - whether these firms are currently listed, delisted or have migrated to the Main Board.</p>

**Appendix 2 Research Participant Consent Form**

**PLEASE READ THIS DOCUMENT CAREFULLY.**

**(i) YOU ARE REQUIRED TO SIGN THIS FORM IN AFFIRMATION OF YOUR AGREEMENT TO PARTICIPATE IN THIS SURVEY.**

**(ii) NOTE THAT YOU MUST BE AT LEAST 18 YEARS OF AGE TO GIVE YOUR CONSENT TO PARTICIPATE IN THIS RESEARCH.**

**(iii) ALSO, YOU MIGHT REQUEST A COPY OF THIS CONSENT FORM, IF YOU DEEM IT NECESSARY TO HAVE YOUR OWN COPY.**

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

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**Research Supervisor:** Prof GE CHILOANE-PHETLA

1. I have read the Information Sheet for this study and have had details of the study explained to me.
2. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.
3. I also understand that I am free to withdraw from the study at any time or to decline to answer any particular questions in the study.
4. I agree to provide information to the researchers under the conditions of confidentiality set out on the information sheet.
5. I wish to participate in this study under the conditions set out in the Information Sheet.
6. I consent/do not consent to the information collected for the purposes of this research study to be used for any other research purposes.
7. I confirm that I have read and understand the participant information leaflet for this study. Also, I have had the opportunity to ask questions if necessary and have had these answered satisfactorily.
8. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. If I withdraw my data will be removed from the study and will be destroyed.

Based upon the above, I agree to take part in this study.

Participant's Name: \_\_\_\_\_

Participant's Signature: \_\_\_\_\_

Date: \_\_\_ / \_\_\_ / \_\_\_\_\_

Contact details: \_\_\_\_\_

Researcher's Name: \_\_\_\_\_

Researcher's Signature: \_\_\_\_\_

Individual obtaining consent..... Date..... Signature.....

**A copy of the signed and dated consent form and the participant Information leaflet should be given to the participant and retained by the researcher to be kept securely on file.**

### Appendix 3 Survey Participant Information Sheet

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

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**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

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**Researcher's relationship to UNISA:** Postgraduate Doctoral Student

**Research Supervisor:** Prof GE CHILOANE-PHETLA

**(1) Invitation:** My name is Mathew Eleojo Egu. I am conducting research on "The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship" through the Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management (DESTTL), College of Economic and Management Sciences (CEMS), University of South Africa, South Africa. I would like to invite you to take part in my PhD research study that seeks to examine the impact of the Johannesburg Stock Exchange's (JSEs) Alternative Exchange (AltX) on listed firms performance and on the level of entrepreneurship in South Africa. Before you decide I would like you to understand why this research is being undertaken and why your participation is a vital part of achieving this goal. Depending on your choice, I would either email, drop off or personally deliver the information sheet for this study and answer any questions that you might have. Before you decide it is important for you to understand why this research is being undertaken and what it will involve. Please take time to read the following information contained herein carefully and discuss it with others if you wish. Feel free to ask the researcher if there is anything that is not clear or if you would like more information.

**(2) Who is carrying out the study?** The research is being conducted by Mr. Mathew Eleojo Egu, a doctoral candidate at the University of South Africa, South Africa. This research forms part of my Doctor of Administration in Business Management studies under the supervision of Professor GE Chiloane-Phetla.

**(3) Description of the proposed study:** This study proposes to investigate the impact that the JSE's AltX has on the performance of listed firm's and determine the effect of this phenomenon on the level of entrepreneurship in South Africa. Also, this study aims to determine empirically whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms, as well as ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms.

**(4) Why have I been invited to participate in this study?** You were selected as a possible participant in this study because of your experience and leadership position in an AltX listed company. There are also 59 other participants who will participate in this study. All target firms were selected based on their registration on the lower bourse of the exchange.

**(5) Do I have to take part?** Your participation in this study is voluntary. While I would be pleased to have you participate I respect your right to decline. It is up to you to decide whether or not to take part in this study. If you do decide to take part you will be given this information sheet to keep (and be asked to sign a consent form). However, you can still withdraw your consent at any time without it affecting any benefits that you are entitled to in any way pertaining to this study. Furthermore, you do not have to give a reason to decline consent thereafter.

**(6) What does this study involve?** As a participant in this study, you will be involved in a survey. You will be given enough time to fill in the questionnaire and hand in back to the principal researcher based on our prior agreement. Depending on your interest you can also involve in the second phase of the study which follows the survey result.

**(7) What is the duration of time for completing this study's questionnaire?** The survey will take roughly 15 minutes to complete. Important demographic information will be collected. This will consist of your directorship experience, international business experience, level of education, the sectoral classification of your company's activities etc. No other personal information will be collected by the researcher. Finally, the participant shall complete a rating of various AltX issues that are relevant to this study.

**(8a) What are the possible risks and benefits of participation?** In this survey questionnaire there are no discomforts, inconveniences and potential risks that confront survey participants. Also, there are no foreseeable risks or discomforts that will be experienced while participating in this survey. The possible probability of inconvenience has been minimised by the researcher while designing this survey instrument.

**(8b) Possible Benefits:** After the completion of this study, you will be given an opportunity to learn about the research findings, outcomes and conclusions, which would be useful to both you and your company.

**(9) Will I incur any costs while participating in this study?** There are no costs to you during and after your participation in this study, beyond the critical time and effort that is required to participate in the survey described above.

**(10) Confidentiality and disclosure of information:** The confidentiality of all recorded information will be maintained to the greatest extent possible. This is because the responses that you will give to questions in this survey is going to be coded in such a way that your identity will be concealed.

**(11) Responsibilities of the Researcher:** It is my duty to make sure that any information given by you is protected. Your name and other identifying information will not be attached to any data collected that is going to be collated.

**(12) Responsibilities of the Participant:** It is your responsibility to provide one appropriate answer to each and every question that is asked based on your organisation's peculiarities and informed judgement.

**(13) Can I withdraw from the study?** Participation in this study is voluntary - you are not under any obligation to consent and - if you do consent - you can withdraw it at any stage.

**(14) Opportunities to be informed of Results:** If you wish to be told the results of this research, please contact:

**Principal investigator: Mr. Mathew Eleojo Egu**

**Phone: +234-8037443826**

**E-mail: [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)**

I will either meet with you or direct you to where you can read a copy of the results. Also, up on request the executive summary of this study's research finding will be made available to participants.

How can I obtain further information? If you would like to know more at any stage, please feel free to contact either the researcher or research supervisor, **Professor GE Chiloane-Phetla (E-mail: [chiloge@unisa.ac.za](mailto:chiloge@unisa.ac.za))**

What can I do if I have a complaint or a concern? Any concerns or complaints about the conduct of this study should be directed to:

Mathew Eleojo Egu (*BSc Hons, MAdmin, MCITP, M.Inst.D*)

**PhD scholar**

**Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management**

**College of Economic and Management Sciences**

**University of South Africa, South Africa.**

**E-mail: [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)**

**Telephone- +234-8037443826**

Any complaint will be investigated and you will be informed of the outcome.

If you wish to take part in it, please sign the consent form overleaf.

**Thank you for participating in this research project**

**This information sheet is for you to keep.**



#### Appendix 4 Consent for Participation in Survey Research

**PLEASE READ THIS DOCUMENT CAREFULLY. YOUR SIGNATURE IS REQUIRED FOR PARTICIPATION.**

**YOU MUST BE AT LEAST 18 YEARS OF AGE TO GIVE YOUR CONSENT TO PARTICIPATE IN RESEARCH.**

**IF YOU DESIRE A COPY OF THIS CONSENT FORM, YOU MAY REQUEST ONE AND I WILL PROVIDE IT.**

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

**Principal Researcher's name:** Mathew Eleojo Egu

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

**Telephone:** +234-8037443826

**Researcher's relationship to UNISA:** Postgraduate Doctoral Student

**Research Supervisor:** Prof GE CHILOANE-PHETLA

**Dear Sir/Madam,**

I will like to inform you about your invitation to participate in a survey questionnaire prepared to gather vital primary data for my PhD research project in Business Management. Besides, this study is a firm level analysis that seeks to measure the impact that the JSE's AltX has on the performance of listed firms and the level of entrepreneurship in South Africa. Hence, it became mandatory for me to contact you due to your experience and position as a chief executive officer (CEO)/director/top management team (TMT) member of a JSE's AltX listed company. Furthermore, it is of utmost importance to inform you that the purpose of this survey is only for gathering primary data for academic research purpose only, so it would be highly appreciated if you could spare your valuable time to participate in this study. More so, due to the ethical consideration of this research, the information elicited from you will be treated with the strictest confidentiality, and will be used solely for research purposes only. It is my presumption that the research findings and the conclusions of this study would contribute significantly to this field of study, because it proffers a nuanced treatment of this phenomenon; since it identifies the impact of firm listing on the performance and the level of entrepreneurship in South Africa. This will certainly serve as a comprehensive input for practitioners, policy makers, and researchers in this field of study.

***This study is envisaged to meet the following key objectives:***

- ❖ To determine the impact that the JSE's AltX has on listed firms performance.
- ❖ To determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa.
- ❖ To quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms.
- ❖ To ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms.

I hereby volunteer to participate in a research project conducted by Mathew Eleojo Egu from the University of South Africa. I understand that the study is designed to gather information about the impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and the level of entrepreneurship in South Africa. I will be one of approximately 60 persons to be surveyed in this research.

1. I have read the Information Sheet for this study and have had details of the study explained to me.
2. My participation in this study is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. If I decline to participate or withdraw from this study, no one will be told.
3. I understand that most participants will find the survey questionnaire interesting and thought provoking. If, however, I feel uncomfortable in any way during the survey session, I have the right to decline to answer any question or to end the survey questionnaire administration procedure.
4. Participation involves being surveyed by the researcher from the University of South Africa, South Africa. The questionnaire will take approximately 15 minutes to fill up.
5. I understand that I have to return the completed questionnaires to the principal researcher within three (3) weeks of granting my informed consent to participate in this study.
6. Later on, depending on my choice, I will arrange with the principal researcher to either email or deliver the survey questionnaire by hand to the principal researcher or courier it to the principal researcher using the address provided at the bottom of this form after fill up.
7. I understand that the researcher will not identify me by name in any reports using information obtained from this survey questionnaire, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of respondents and their company.
8. I have read and understand the explanation provided to me. And, I have had all my questions answered to my satisfaction. Hence, I voluntarily agree to participate in this study.
9. I have been given a copy of this consent form.

<b>My Signature</b>	<b>Date</b>
<b>My Printed Name</b>	<b>Signature of the Investigator</b>

For further information, please contact:

Mathew Eleojo Egu  
**PhD scholar**  
**Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management**  
**College of Economic and Management Sciences**  
**University of South Africa**  
**E-mail: [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)**  
**Telephone: +234-8037443826**

## Appendix 5 Survey Instrument

### Participant No.....

**Survey Questionnaire to be filled by the JSE's AltX listed firm's CEOs/Directors/Top Management Team members**

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

**Principal Researcher's name:** Mathew Eleojo Egu

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

**Telephone:** +234-8037443826

**Researcher's relationship to UNISA:** Postgraduate Doctoral Student

**Research Supervisor:** Prof GE CHILOANE-PHETLA

**Dear Sir/Madam,**

I will like to inform you about your invitation to participate in a survey questionnaire prepared to gather vital primary data for my PhD research project in Business Management. Besides, this study is a firm level analysis that seeks to measure the impact that the JSE's AltX has on the performance of listed firms and the level of entrepreneurship in South Africa. Hence, it became mandatory for me to contact you due to your experience and position as a chief executive officer (CEO)/director/top management team (TMT) member of a JSE's AltX listed company. Furthermore, it is of utmost importance to inform you that the purpose of this survey is only for gathering primary data for academic research purpose only, so it would be highly appreciated if you could spare your valuable time (approximately 15 minutes) to participate in this study. More so, due to the ethical consideration of this research, the information elicited from you will be treated with the strictest confidentiality, and will be used solely for research purposes only. It is my presumption that the research findings and the conclusions of this study would contribute significantly to this field of study, because it proffers a nuanced treatment of this phenomenon; since it identifies the impact of firm listing on the performance and the level of entrepreneurship in South Africa. This will certainly serve as a comprehensive input for practitioners, policy makers, and researchers in this field of study.

***This study is envisaged to meet the following key objectives:***

- ❖ To determine the impact that the JSE's AltX has on listed firm's performance.
- ❖ To determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa.
- ❖ To quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms.
- ❖ To ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms.

### **PART I: DEMOGRAPHIC INFORMATION**

*This section of the survey questionnaire will collect basic information about the CEO/director/TMT member and the listed firm that s/he oversees, in order to make inferences about the quality of decision-making, as well as to assist in pin-pointing the industry classification and direction of the firm.*

1. Gender

- Male  Female

2. How many years of directorship level experience do you have?

- Under 2 years  
 2 to 5 years  
 6 to 10 years  
 Over 10 years

3. Your level of education (i.e. highest academic qualification obtained)

- Certificate  
 Diploma  
 Degree  
 Masters  
 PhD  
 Other (please specify).....

4. Your ethnic group

- Black African  
 White  
 Coloured  
 Indian or Asian  
 Other (please specify).....

5. Which sector does your company operate in?

- Construction and materials sector  
 Finance and services sector  
 General industrials sector  
 Mobile telecommunications & technology sector  
 Mining & steel sector  
 Travel & leisure sector  
 Pharmaceuticals, biotechnology & health sector  
 Media sector  
 Real estate investments and service sector  
 Food sector  
 Power and renewable energy sector  
 Other (please specify).....

6a. Have you ever worked in a foreign country before you joined or established the current company?

- Yes  No

6b. If yes for how long did you work abroad?

- Under 2 years  
 2 to 5 years

- 6 to 10 years
- Over 10 years

7. Number of employees in your company .....

- Less than 20
- 20 to 100
- 100 to 200
- 200 and above

8. Where is the location of your company?

- City centre
- Township
- Rural area
- Suburb
- Other (please specify).....

9a. Is your company selling goods in foreign markets?

- Yes  No

9b. If yes for how long?

- Under 2 years
- 2 to 5 years
- 6 to 10 years
- Over 10 years

10. What plans are in place for the expansion of your company?

- Increase production and/or service base
- Open new branches
- Franchising
- Exporting through foreign affiliation
- Joint ventures
- Mergers and Acquisitions (M&A)
- Other (please specify).....

**PART II: IMPACT OF FIRM LISTING ON THE JSE'S ALT X**

*The second part of this survey questionnaire is primarily concerned with the benefits of listing on the JSE's AltX. It is anticipated that this advantage would be of varying significance based on the industrial sector where these firms operate in. Hence, this would provide deep insights about the desired level of support that is expected to be provided by the lower bourse to high growth firms.*

Note: 1=Strongly disagree; 2=Disagree; 3=Undecided; 4=Agree; 5=Strongly agree

	Strongly disagree			Strongly agree	
a. Registering on the lower bourse helped to improve my company performance	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b. Listing on the AltX facilitated the growth of the company's revenue base and enhanced the level of firm profitability	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c. Many stakeholders became more confident when transacting with our company	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d. Listing increased the level of media publicity and raised the profile of our organisation both locally and internationally	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
e. Registering on the junior exchange helped to attract and retain skilled talent that can assist in achieving firm goals	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
f. Listing aided the development of a good record keeping culture in the company that complies with existing regulation	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
g. The combination of miscellaneous factors caused an improved performance of firm operations	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

### PART III: THE IMPACT OF FIRM LISTING ON THE LEVEL OF ENTREPRENEURSHIP IN SOUTH AFRICA

*Building on the previous section, the third part of this survey questionnaire will be used to ascertain inferences about the impact of firm listing on the level of entrepreneurship in South Africa through the measurement of related variables.*

Note: 1=Strongly disagree; 2=Disagree; 3=Undecided; 4=Agree; 5=Strongly agree

	Strongly disagree			Strongly agree	
a. An increase in the number of listings on the AltX have a net positive impact on the level of entrepreneurship in South Africa	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
b. SME registration on the lower bourse boosts the level of creativity, innovation and R&D in South Africa	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
c. It enhances the efficiency and effectiveness of our company, hence improves firm competitiveness	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
d. The AltX serves as an incubator for young high growth companies, and assists in the training of SME managers	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
e. Registering on the junior exchange encourages entrepreneurial risk taking, and increases business confidence	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
f. Firm listing motivates entrepreneurs by creating a high energy environment, where ideation thrives iteratively	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>
g. The combination of miscellaneous factors causes firm listing to impact on the level of entrepreneurship in South Africa	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>5</sub>

### PART IV: INCREASED SHARE CAPITAL LEVELS INFLUENCE ON THE EXPANSION AND PERFORMANCE OF LISTED FIRMS

*This section of the survey questionnaire seeks to find out if increased share capital levels have a positive significant influence on the ability of the JSE's AltX listed firm's capacity to expand and perform optimally i.e. above their unlisted peers.*

Note: 1=Strongly disagree; 2=Disagree; 3=Undecided; 4=Agree; 5=Strongly agree

	Strongly disagree			Strongly agree	
a. We used the initial public offering (IPO) of our company's share as a principal source of capital financing for the firm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Listing on the AltX enabled our company to pool funds for expansionary purposes via acquisitions and joint ventures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Corporate bonds and equities sold by our company on the AltX guaranteed the long-term sustainability of our business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. The capital sourced from the AltX is being used to achieve our short-term goals such as product and market expansion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Listing funds was used to diversify our market segments across various niches and increase our manufacturing volume	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Registering on the AltX enabled us to gain international exposure and has helped to consolidate our industry position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. A combination of miscellaneous factors triggered our share capital growth and led to improved performance/expansion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## PART V: THE IMPACT OF COMPLIANCE REQUIREMENTS ON THE B-BBEE SCORE PERFORMANCE OF LISTED FIRMS

*In this section of the survey questionnaire the impact of compliance requirements i.e. regulation on the B-BBEE score performance of listed firms are being investigated. This will assist in gathering information on the benefits and significance of sustainable business engagements with the local host community.*

Note: 1=Strongly disagree; 2=Disagree; 3=Undecided; 4=Agree; 5=Strongly agree

	Strongly disagree			Strongly agree	
a. The implementation of good governance systems like the B-BBEE by listed firms makes them attractive to all stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Listing on the AltX made us to secure a BEE enabler for the group, thus adding substantial value to the firm's proposition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. The mandatory compliance to the B-BBEE act enhanced our reputation, ratings and improved our performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Listing enabled firms to deliver community development engagement programmes that are environmentally sustainable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Compliance ensures participation in all tendering processes, application for licences, permits and public sector procurement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. The impact of our compliance with the B-BBEE requirement was that we had access to tax incentives and financial grants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. A combination of miscellaneous factors instigated by compliance helped to improve our B-BBEE score performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## PART VI: COMMENTS

*The last part of the survey questionnaire will focus on the merit and demerits of listing on the JSE's AltX, as well as point out the prospects and risks that are associated with registering on a stock exchange. It is expected that the*

*informed opinion of the JSE's AltX listed companies' CEOs/directors/TMT members is vital and would assist in exposing issues that are not adequately covered in other sections of this questionnaire.*

Strengths.....

.....

Weaknesses.....

.....

Opportunities.....

.....

Threats.....

.....



## Appendix 6 Interview Participant Information Sheet

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

**Principal Researcher's name:** Mathew Eleojo Egu

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

**Telephone:** +234-8037443826

**Researcher's relationship to UNISA:** Postgraduate Doctoral Student

**Research Supervisor:** Prof GE CHILOANE-PHETLA

### (1) Invitation

My name is Mathew Eleojo Egu. I am conducting research on "The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship" at the Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management, College of Economic and Management Sciences, University of South Africa, South Africa. I hereby invite you to take part in my PhD research study as an interview participant. Before you decide to accept this offer, I would like you to understand why this research is being undertaken and my expectation(s) from you. Furthermore, it is important for you to understand why the research is being carried out and what it will involve. Please take time to read the following information carefully. You may kindly ask the researcher if there is any vague area that needs to be made clear, or if you would like more information or any part of this study. It is expected that you will decide whether or not to take part in this research afterwards.

### (2) Who is carrying out the study?

This research is being conducted by Mathew Eleojo Egu, a doctoral candidate at the University of South Africa. This research forms part of my Doctor of Administration in Business Management studies under the supervision of Prof GE Chiloane-Phetla.

### (3) Description of the proposed study

This study proposes to measure the impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and the level of entrepreneurship in South Africa, so that a more nuanced treatment of this phenomenon can be either disaggregated or deconstructed for use by researchers, SMEs, industry practitioners and policy makers.

### (4) Why have I been invited to participate in this study?

You were selected as a potential participant in this study because of your experience, expertise and leadership position in an AltX listed company. There are also 9 other participants who will participate in this study.

### (5) Do I have to take part?

Your participation in this study is entirely voluntary and is very well appreciated. If at all you do agree to participate in this study, you could (as well) freely withdraw at any time without comment or penalty. If you withdraw, on request any identifiable information already obtained from you will be destroyed. Your participation will require an audio-recorded interview that would take

approximately 15 minutes to complete. This is to be held in a location of your choice - at a time that is convenient for you.

(6) What does this study involve?

As a participant in this study, it implies that the researcher will interview you. You will be informed in advance so that you can prepare on time, in order to avoid loss of relevant information for the interview due to lack of preparation and poor memorisation.

(7) What time the study will take?

The interview will take approximately 15 minutes to complete. Important demographic information will be asked in addition to main research question collected. This will consist of your firm international business experience, business line, type of company etc. as it is necessary to provide group related statistics. The researcher will collect no other personal information. The place of interview will be decided based on agreement between the respondent and the researcher.

(8) What are the possible risks and benefits of participation?

In this semi-structured interview there are no foreseeable risk of discomfort and inconvenience that the participant may experience. Also, there are no emotion-laden questions in the protocol or any other problem, due to the fact that the interviewer is the principal researcher. As with any human engagement, the only possible risk is that of the use of about 15 minutes of your time to complete this interview. Hence, this research would not pose a risk above the everyday norm.

Possible Benefits:

After participating in this study, you will be given an opportunity to learn about the outcome of this research, because its finding will be beneficial to your company.

(9) Will I incur any costs by participating in the study?

There are no costs to either you or your company for your participation in this study beyond the time and effort required to participate in the interview process/protocol described above.

(10) Confidentiality and disclosure of information

All comments and responses will be treated as confidential information. Any data collected as part of this project would be stored securely as per the University of South Africa's management of research data policy. Likewise, any other information obtained in connection with this research that can identify you will remain confidential.

The audio recording will be transcribed and retained at a secured place and will be discarded after end of this study.

(11) Responsibilities of the Researcher

It is my duty to make sure that any information given by you is protected. Hence, your name and other identifying information will not be associated with the data collected.

(12) Responsibilities of the Participant

It is your responsibility to provide reliable and authentic information independent of your personal interest or motives. Also, it is your duty as an interviewee to try as much as possible to use your experience and judgment to provide the researcher with dependable, reliable and impartial information.

(13) Can I withdraw from the study?

Participation in this study is voluntary - you are not under any obligation to consent and - if you do consent - you can withdraw at any stage.

Opportunities to be informed of Results:

If you wish to be given the results/findings of this research, please contact:

**Principal investigator:** Mathew Eleojo Egu (*BSc, MAdmin, MCITP, M.Inst.D*)

**Phone:** +234-8037443826

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

Will I be recorded, and how will the recorded media be used?

The transcribed audio recording of this interview will be used only for analysis and for conference presentations. No other use will be made of them without your written permission, and no one other than the researcher will be allowed access to the original recordings.

**If you wish to take part in it, please sign the consent form overleaf.  
Thank you for helping with this research project. This information sheet  
is for you to keep.**

Mathew Eleojo Egu

**PhD scholar**

**Department of Entrepreneurship, Supply Chain, Transport, Tourism and  
Logistics Management**

**College of Economic and Management Sciences**

**University of South Africa**

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

**Telephone:** +234-8037443826

## Appendix 7 Consent for Participation in Interview Research

**PLEASE READ THIS DOCUMENT CAREFULLY. YOUR SIGNATURE IS REQUIRED FOR PARTICIPATION.**

**YOU MUST BE AT LEAST 18 YEARS OF AGE TO GIVE YOUR CONSENT TO PARTICIPATE IN RESEARCH.**

**IF YOU DESIRE A COPY OF THIS CONSENT FORM, YOU MAY REQUEST ONE AND I WILL PROVIDE IT.**

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

**Principal Researcher's name:** Mathew Eleojo Egu

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

**Telephone:** +234-8037443826

**Researcher's relationship to UNISA:** Postgraduate Doctoral Student

**Research Supervisor:** Prof GE CHILOANE-PHETLA

**Dear Sir/Madam,**

I will like to inform you about your invitation to participate in a semi-structured interview protocol prepared to gather vital primary data for my PhD research project in Business Management. Besides, this study is a firm level analysis that seeks to measure the impact that the JSE's AltX has on the performance of listed firms and the level of entrepreneurship in South Africa. Hence, it became mandatory for me to contact you due to your experience and position as a chief executive officer (CEO)/director/top management team (TMT) member of a JSE's AltX listed company. Furthermore, it is of utmost importance to inform you that the purpose of this interview protocol is only for gathering primary data for academic research purpose only, so it would be highly appreciated if you could spare your valuable time to participate in this interview. More so, due to the ethical consideration of this research, the information elicited from you will be treated with the strictest confidentiality, and will be used solely for research purposes only. It is my presumption that the research findings and the conclusions of this study would contribute significantly to this field of study, because it proffers a nuanced treatment of this phenomenon; by identifying the impact of firm listing on the performance and the level of entrepreneurship in South Africa. This will certainly serve as a comprehensive input for practitioners, policy makers, and researchers in this field of study.

***This study is envisaged to meet the following key objectives:***

- ❖ To determine the impact that the JSE's AltX has on listed firms performance.
- ❖ To determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa.
- ❖ To quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms.
- ❖ To ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms.

I hereby volunteer to participate in a research project conducted by Mathew Eleojo Egu from the University of South Africa. I understand that the study is designed to gather information about the impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and the level of entrepreneurship in South Africa. I will be one of approximately 10 persons to be interviewed in this research.

1. I have read the Information Sheet for this study and have had details of the study explained to me.
2. My participation in this study is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. If I decline to participate or withdraw from this study, no one will be told.
3. I understand that most interviewees will find the ensuing discussion interesting and thought provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.
4. Participation involves being interviewed by the researcher from the University of South Africa, South Africa. The interview will last approximately 15 minutes. Notes will be written during the interview. An audiotape would be used to record the interview. Furthermore, if I don't want to be taped, it then implies that I will not be able to participate in the study.
5. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of respondents and their company.
6. I have read and understand the explanation provided to me. And, I have had all my questions answered to my satisfaction. Hence, I voluntarily agree to participate in this study.
7. I have been given a copy of this consent form.

<b>My Signature</b>	<b>Date</b>
<b>My Printed Name</b>	<b>Signature of the Investigator</b>

For further information, please contact:

Mathew Eleojo Egu  
**PhD scholar**  
**Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management**  
**College of Economic and Management Sciences**  
**University of South Africa**  
**E-mail: [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)**  
**Telephone: +234-8037443826**

## Appendix 8 Semi-Structured Interview Protocol

**Research Study title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

**Principal Researcher's name:** Mathew Eleojo Egu

**E-mail:** [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)

**Telephone:** +234-8037443826

**Researcher's relationship to UNISA:** Postgraduate Doctoral Student

**Research Supervisor:** Prof GE CHILOANE-PHETLA

**Dear Sir/Madam,**

I will like to inform you about your invitation to participate in a semi-structured interview protocol prepared to gather vital primary data for my PhD research project in Business Management. Besides, this study is a firm level analysis that seeks to measure the impact that the JSE's AltX has on the performance of listed firms and the level of entrepreneurship in South Africa. Hence, it became mandatory for me to contact you due to your experience and position as a chief executive officer (CEO)/director/top management team (TMT) member of a JSE's AltX listed company. Furthermore, it is of utmost importance to inform you that the purpose of this interview protocol is only for gathering primary data for academic research purpose only, so it would be highly appreciated if you could spare your valuable time (approximately 15 minutes) to participate in this interview. More so, due to the ethical consideration of this research, the information elicited from you will be treated with the strictest confidentiality, and will be used solely for research purposes only. It is my presumption that the research findings and the conclusions of this study would contribute significantly to this field of study, because it proffers a nuanced treatment of this phenomenon; by identifying the impact of firm listing on the performance and the level of entrepreneurship in South Africa. This will certainly serve as a comprehensive input for practitioners, policy makers, and researchers in this field of study.

***This study is envisaged to meet the following key objectives:***

- ❖ To determine the impact that the JSE's AltX has on listed firms performance.
- ❖ To determine whether the JSE's AltX impact on the level of entrepreneurship in South Africa.
- ❖ To quantitatively determine whether there is a link between increased capitalisation of the AltX and the expansionary drive of listed firms.
- ❖ To ascertain the impact that the listing requirements of the AltX has on the B-BBEE score performance of listed firms.

**Pre-interview Procedures to be followed:**

The researcher will provide the interviewee with the participant information sheet in advance of the interview. The key informant will be asked whether he/she needs any clarifications regarding the 'Information Sheet for the Interview'. If required, the researcher will clarify any points that are being raised by the informant. After the details of the 'Information Sheet for the Interview' are understood by the informant and before commencement of the interview, the interviewee would complete the 'Informed Consent for Interviews' form. Furthermore, the researcher will briefly intimate the interviewee with an overview of the interview process. If necessary, the researcher would delete whatever

information the interviewee objects to. And, thereafter ensure that the informant sign the interview participant consent form.

Following the pre-interview procedure, a brief summary of the research study would be provided for the informant, and an in-depth interview shall begin afterwards with the following questions in a flexible sequential order (i.e. in no particular order). Kindly note that both directive probing and non-directive probing techniques will be used in this interview protocol to get broader, more specific, more personal and clearer information about the topic.

**PART I: GENERAL INFORMATION**

1. Name of the Company (to be coded) -----
2. Year of establishment -----
3. Respondent position and responsibility -----
4. Respondent educational level -----
5. Company's area of operation -----
6. Experience in international markets -----
7. Number of employees -----
8. Presently, in how many overseas countries are your product been marketed? -----
9. In addition to exporting, is your company using other modes of international trade, like joint venture, mergers & acquisition (M&A), direct investment and/or contractual agreement overseas? -----
10. Is your company listed on other stock exchange(s) abroad, if yes why? ----

**PART II: THE JSE'S ALTX IMPACT ON LISTED FIRM'S PERFORMANCE AND ENTREPRENEURSHIP**

11. What motivated your company to register on the JSE's AltX?
12. How does listing on the lower bourse influence your performance?
13. To what extent do you think that the JSE's AltX contribute to the level of entrepreneurship in South Africa?
14. How does increased share capital levels impact on your company's performance and expansionary plans?
15. Do you think the strict compliance requirement of the AltX impact on your B-BBEE score performance?
16. Can you recommend other small businesses to list on the JSE's AltX?
17. What are the major market and industry factors that impact on your business - as a listed company?
18. What are the potential threats and weaknesses that confront your company as a registered firm?
19. Is the government doing enough to support your business?
20. Can competition caused by international firms affect the attractiveness of firm listing on the lower bourse?
21. What, if anything, would you like to say about listing on the JSE's AltX?

\*\*\*\*\* **THANK YOU FOR YOUR TIME** \*\*\*\*\*

Kindly note that the finding of this research is available upon request: when this study is concluded.

Mathew Eleojo Egu  
**PhD scholar**  
**Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management**  
**College of Economic and Management Science**  
**University of South Africa**  
**E-mail: [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za)**  
**Telephone: +234-8037443826**

## Appendix 9 Confidentiality Agreement

I \_\_\_\_\_ (principal investigator's name) hereby agreed that, during the course of my activity in collecting data for this research: [The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship]

I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement I acknowledge and agree that:

I will not disclose or discuss any confidential information with others, including friends or family.

I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorised.

I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.

I will not make any unauthorised transmissions, inquiries, modification or purging of confidential information.

I agree that my obligations under this agreement will continue after the completion of this study.

I understand that violation of this agreement will have legal implications.

I will only access or use resources that I am officially authorised to access and

I will not disclose the raw data to unauthorised individuals.

*Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.*

\_\_\_\_\_  
*Signature of the principal investigator*

\_\_\_\_\_  
*Date*

**Mathew Eleojo Egu**

**PhD scholar**

**Department of Entrepreneurship, Supply Chain, Transport, Tourism and Logistics Management**

**College of Economic and Management Sciences**

**University of South Africa,**

**E-mail: [46242597@mylife.unisa.ac.za](mailto:46242597@mylife.unisa.ac.za) Tel: +234-8037443826**

**Research Supervisor: Prof GE Chiloane-Phetla**

**Professor**

**Department of Applied Management**

**College of Economic and Management Sciences**

**University of South Africa**

**Preller Street, Muckleneuk Ridge, Pretoria**

**P.O. Box 329 UNISA 0003 South Africa**

**Tel: +27124292008 Fax: +27124298558 E-mail: [chiloge@unisa.ac.za](mailto:chiloge@unisa.ac.za)**



**Appendix 10 Ethics Clearance Certificate**

**UNISA DESTTL ETHICS REVIEW COMMITTEE**

Date: 02/08/2018

Dear Mathew Eleojo Egu

ERC Reference  
2018\_CEMS\_ESTTL\_004  
Name : Mathew Eleojo Egu  
Student #: +234 803 744 3826  
Staff #:

**Decision: Ethics Approval from  
08/2018 to 08/2021**

**Researcher(s):** Mr Mathew Eleojo Egu  
mathewegu@gmail.com, +234 803 744 3826

**Supervisor (s):** Prof GE Chiloane-Tsoka  
chiloge@unisa.ac.za, 072 828 9257

**Working title of research:**

**The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship**

**Qualification:** PhD: Management Studies (Entrepreneurship)

Thank you for the application for research ethics clearance by the Unisa DESTTL Ethics Review Committee for the above mentioned research. Ethics approval is granted for three years.

*The low risk application was reviewed by the DESTTL Ethics Review Committee in July 2018 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was approved on the 2<sup>nd</sup> of August 2018.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the DESTTL Committee.



3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
  4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
  5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
  6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
  7. No field work activities may continue after the expiry date (xxx). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.
- Note:*  
 The reference number **2018\_CEMS\_ESTTL\_004** should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,



Signature  
 Acting Chair of DESTTL ERC  
 E-mail: mmakonm@unisa.ac.za  
 Tel: (012) 429-4298



Signature  
 Executive Dean : CEMS  
 E-mail: mogalmt@unisa.ac.za  
 Tel: (012) 429-4419

### Appendix 11 Turnitin Report (A)

## The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

#### ORIGINALITY REPORT

<b>4%</b>	<b>4%</b>	<b>0%</b>	<b>0%</b>
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

#### PRIMARY SOURCES

<b>1</b>	<b>hdl.handle.net</b> Internet Source	<b>2%</b>
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NB: In line with the University of South Africa's (Unisa's) [Policy for Copyright Infringement and Plagiarism](#) the researcher clearly indicated with quotation marks and indentations phrases taken verbatim from other authors' works, or used paraphrasing, but did not patch-write from other relevant sources or use more than a substantial part of the work of other authors. More so, any work consulted was acknowledgement by means of adequate citation and references as stipulated in the [Policy for Copyright Infringement and Plagiarism](#). This Turnitin report hence shows the authenticity of the current thesis as an original report. Although, the percentage shown on the Originality Report is an indication of non-originality, similarity is by no means a percentage of and/or reflection of plagiarism. Thus, as indicated in the [frequently asked questions](#) (in particular question 27 and 28) for Turnitin reports, Unisa's universal rule that the similarity of any single source has to be below 5% was clearly abided to throughout this research with the highest internet source being 2%. Lastly, the similarity score of 4% when matches less than 1% are excluded was therefore fantastic, which is good.

## Appendix 12 Turnitin Report (B)

### The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

#### ORIGINALITY REPORT

**19%**

SIMILARITY INDEX

**16%**

INTERNET SOURCES

**5%**

PUBLICATIONS

**7%**

STUDENT PAPERS

#### PRIMARY SOURCES

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<b>2</b>	<b>uir.unisa.ac.za</b> Internet Source	<b>1%</b>
<b>3</b>	<b>repository.up.ac.za</b> Internet Source	<b>&lt;1%</b>
<b>4</b>	<b>en.wikipedia.org</b> Internet Source	<b>&lt;1%</b>
<b>5</b>	<b>wiredspace.wits.ac.za</b> Internet Source	<b>&lt;1%</b>
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Exclude matches  Off

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## Appendix 13 Professional English Language Editing Certificate



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12 November 2021

**Professor Evelyn G. Chiloane-Phetla**  
University of South Africa  
Preller Street, Muckleneuk Ridge, City of Tshwane  
P.O. Box 392, UNISA 0003  
South Africa

### **ENGLISH LANGUAGE EDITING CERTIFICATE**

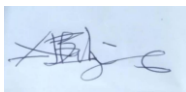
**Author's name:** Mathew Eleojo Egu

**Thesis title:** The impact of the Johannesburg Stock Exchange's Alternative Exchange on listed firm's performance and entrepreneurship

This letter confirms that the thesis corresponding to the information detailed above was proofread and edited professionally by EliteMind Language Editing Service. The thesis was edited for proper English Language, spelling, grammar, vocabulary, punctuation, paragraph transition, sentence structure, pronoun matches, correct matching of acronyms, captions and labels for figures, tables and the appendix, as well as reference spot checking and overall style by our academic editor. Moreover, the editor tried to ensure that the author's intended meaning was not altered during the review.

Our proven ability to carry out a thorough academic edit is based on decades of experience assisting students, authors and researchers with their English language editing assignments. Should in case you require further information, please feel free to contact us.

Yours sincerely,



**Francis Attah Egu** (BA English (UDUS), MA English Language (UNN), Member of ESAN and LAN)  
**Editor**  
Former Dean of the School of General Studies, Federal Polytechnic of Oil and Gas, Bonny, Rivers State, Nigeria