



*Entrepreneurial finance models for born-global SMEs in Nigeria*

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# **Entrepreneurial Finance Models for Born-Global SMEs in Nigeria**

Theodore Nwankwo

A thesis submitted in partial fulfilment of the requirements of  
Sheffield Hallam University for the degree of Doctor of Philosophy

**March 2023**

## Declaration

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I hereby declare that:

1. I have not been enrolled for another award of the University, or other academic or professional organisation, whilst undertaking my research degree.
2. None of the material contained in this thesis has been used in any other submission for an academic award.
3. I am aware of and understand the University's policy on plagiarism and certify that this thesis is my own work. The use of all published or other sources of material consulted has been properly and fully acknowledged.
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5. The word count of the thesis is 70,551

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## Abstract

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The main aim of this research is to critically analyse the impact of entrepreneurial finance models (EFM) on the outcome and performance of Born-global Small and Medium Enterprises (BG SMEs). The study questions the impact of EFMs obtained on the profitability, social return on investment, and firm structure of BG SMEs in Nigeria. This research focuses on a unique type of SMEs described as BG SMEs.

Using a positivist philosophical approach that is centred on objectivity and a quantitative methodology, the research collected data using questionnaires. A total of 1100 SMEs were contacted, and 237 BG SMEs were identified from that list which has been used as the representative sample size of this research. The data collected through the survey was analysed using Ordinal Logistic Regression (OLR) and Confirmatory Factor Analysis (CFA).

The research presents five (5) key findings: 1. Independent venture capital (IVC), Philanthropic Venture Capital (PhVC), Corporate Venture Capital (CVC), Government Grant (GG), Bank, Business Angels (BA), Crowdfunding and Accelerators have a positive impact on one or more metrics of BG SMEs' profitability; 2. Crowdfunding, Banks, Government Venture Capital (GVC), GG, Accelerators, PhVC, CVC, and BA have a statistically significant impact on the firm structure of BG SMEs leading to a change in their management and board compositions; 3. Management experience has a moderating positive influence on the relationship of IVC, PhVC, CVC, Banks, GG, and Accelerators and one or more metrics of BG SMEs' profitability, whilst also having a moderating influence on Crowdfunding, Accelerators, GVC, CVC, and GG interactions with BG SMEs' firm structure leading to their change in management and board compositions; 4. Firm Size has a moderating positive effect on EFMs (Crowdfunding, IVC, PhVC, CVC, Bank, GG, and Accelerators) relationship with BG SMEs' profitability whilst also influencing the relationship between EFMs (Crowdfunding, GVC, CVC, Accelerators, and IVC) and the firm structure of BG SMEs; and 5. The findings support the research hypotheses, and it was seen that different EFMs had different levels of impact on BG SMEs which was consistent with the research expectations. All BG SMEs analysed in this research do not measure their SROI despite 46% of the sample size creating some form of social value.

The study contributes to knowledge by combining the agency theory with the human capital theory to identify the elements, value additions, impact, and influence of the different EFMs on BG SMEs. The results show the important interrelations between both theories and how BG firm performance could be improved by addressing the underlying ideas of the theories.

The outcome of this research thesis has implications for policy and practice. The findings in this research indicate that the type of EFM obtained can impact the profitability and firm structure of BG SMEs in Nigeria. Business owners can address their external funding requirements by utilizing the right finance. Accessing the right EFM can help BG SMEs be more sustainable, thus, reducing the failure rate of these firms. The application of the findings in this study can directly and indirectly lead to the success of the BG SMEs which could invariably lead to economic growth in the region. The more businesses that are successful the more sustainable jobs are created, tax remittance to the government is maintained/improved, and the innovations as outputs of these BG SMEs will support their local communities and other businesses.



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## Abbreviations

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AFCFTA	African Continental Free Trade Area
AU	African union
BA	Business angels
BG firm	Born-global firm
BG SMEs	Born-global Small and Medium Enterprises
BOA	Bank of Agriculture
BOI	Bank of Industry
BRICS	Brazil, Russia, India, China and South Africa
CBN	Central Bank of Nigeria
CEO	Chief Executive Officer
CFA	Confirmatory Factor Analysis
CSR	Corporate social responsibilities
CVC	Corporate venture capital
EBIT	Earnings before interest and tax
EC	European Commission
ECOWAS	Economic Communities of West African States
EFA	Exploratory Factor Analysis
EFInA	Enhancing Financial Innovation and Access
EFMs	Entrepreneurial finance models
EVA	Economic value added
EVPA	European Venture Philanthropy Association
EU	European union
FDI	Foreign Direct Investment
FPI	Foreign portfolio investment
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GG	Government Grant
GVC	Government venture capital
HQ	Headquarters
ICO	Initial coin offering
ICT	Information and communication technology
IFC	International Finance Corporation

IFRS	International Financial Reporting Standard
IMF	International Monetary Fund
IPS	Igbo apprenticeship system
IVC	Independent venture capital
IP	Intellectual property
IPO	Initial public offering
KMO	Kaiser-Meyer-Olkin
KSAOs	Knowledge, skills, abilities and other characteristics
Little MCAR	Little's Missing Completely at Random Test
M&A	Mergers and Acquisitions
MAN	Manufacturers Association of Nigeria
MFBs	Microfinance banks
MINT	Mexico, Indonesia, Nigeria and Turkey
MSMEs	Micro small and medium enterprises
MSMEDF	Micro Small and Medium Enterprises Development fund
NAFTA	North American Free Trade Agreement
NBCI	Nigerian Bank for Commerce and Industry
NBS	National Bureau of Statistics
NEF	New Economics Foundation
NEPC	Nigerian Export Promotion Council
NERFUND	National Economic Reconstruction Fund
NIRSAL Agricultural Lending	Nigeria Incentive-Based Risk Management System for Agricultural Lending
NTBF	New technology-based firms
OPEC	Organization of Petroleum Exporting Countries
PAT	Profit-after-tax
PE	Private equity
PESTAL	Political, economic, socio-cultural, technological, environmental, and legal
PhVC	Philanthropic venture capital
PIS	Participant information sheet
PRA	Political risk assessment
REDF	Roberts Enterprise Development Fund
RObj	Research objective



ROCE	Return on capital employed
ROA	Return on asset
ROE	Return on equity
ROI	Return on investment
ROS	Return on sales
SMEs	Small and medium enterprises
SMEDAN	Small and Medium Enterprise Development Agency of Nigeria
SMIEIS	Small and Medium Industries Equity Investment Scheme
SPSS	Statistical package for social sciences
SROI	Social Return on Investment
SVC	Social venture capital
TVC	Traditional venture capital
U-Model	Uppsala model
US	United States
USD	United States Dollars
UK	United Kingdom
VC	Venture capital
WTO	World trade organization

## Chapter 1: Introduction

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Born-global (BG) firms and small and medium enterprises (SMEs) are a strong driving force to world economic and social growth (World Bank, 2019a; Golvoko & Valentini, 2011), and access to entrepreneurial finance remains important to the growth and survival of these firms (Block, et al., 2019; Brown & Earle, 2017). The SMEDAN/NBS 2018 report highlighted that SMEs contributed 86.3% (59,647,954) of the Nigerian Labour force. 7.64% of exports in Nigeria have been by micro, small and medium enterprises (MSMEs) whilst generating 49.78% of the nation's GDP (Lionel & Edet, 2020). BG SMEs engage in the *exporting* of their business services and products within the first five years of their business operations with a minimum of 30 percent of their total sales income from their international market (Capik & Brockerhoff, 2017; Knight & Cavusgil, 2004). BG SMEs have been described as a specific type of SME and previous research and institutional reports indicate that SMEs, including BG SMEs are usually known to have limited tangible resources (Rodríguez-Serrano & Martín-Armario, 2019; Duarte, et al., 2017; Cavusgil & Knight, 2015; Knight, 2015), which also hinders their access to finance.

This research investigates the different entrepreneurial finance models (EFM) obtainable and their impact on the outcomes of BG SMEs that are headquartered in Nigeria.

In this research work, the word 'firm' is used interchangeably with enterprise, company, business, innovation and venture. In addition, BG SMEs are explained as a distinctive category of SMEs and focuses only on the SMEs that are BG firms (Knight, 2015; Knight, 2004). Thus, this research describes these firms as BG SMEs. The term "BG SMEs" (Born Global SMEs) is used in the research to refer to a specific subset of

SMEs that meet certain criteria related to their internationalization process and revenue sources. Here's a breakdown of the definition:

**BG SMEs:** Born Global SMEs are small and medium-sized enterprises that exhibit rapid internationalization within a specific time frame.

**Internationalization Time Frame:** BG SMEs internationalize between the moment of inception (the time of establishment) and 5 years of business operations. In other words, these SMEs start engaging in international business activities early in their development.

**International Revenue:** To be classified as BG SMEs, these businesses must derive 20% or more of their total revenue from their international operations. This indicates that a significant portion of their income comes from exports or foreign operations.

**Terminology Usage:** Throughout the research, the terms "BG SMEs" and "SMEs" are used interchangeably in the literature chapters. However, in the other sections of the work, the term "BG SMEs" is specifically used to refer to SMEs that meet the criteria of early internationalization and significant international revenue.

The key elements of this research are outlined and discussed in the subsequent sections of the research.

## **1.1 Background of the Research**

There is growing academic interest in the internationalization of firms and BG SMEs (Haruna, et al., 2018; European Commission, 2018; Eniola & Entebang, 2017; World Bank, 2017), and their need for financial sustainability. Some of these growing interests have spurned from increased cultural awareness of foreign markets by both academics and professionals, advancements in technology (Boulocher-Passet, et al.,

2019), improved accessibility to data and information, accessibility to a larger market (Maltby, 2012) at lower cost (Leeflang et al., 2014). The presence of increased numbers of global firms in the global market hinted that the global business landscape was more diverse, with SMEs that had limited resources still wielding significant competitive strength (Cavusgil & Knight, 2015). It is important to understand the dynamics of these firms (BG SMEs) that poses a challenge to conventional knowledge of gradual, incremental business expansion (Cavusgil & Knight, 2015). They add that, the advancements in communication and technology through the internet have made the configuration of BG SMEs less daunting and more attractive.

SMEs are platforms that create jobs on a large scale (World Bank, 2019a; Takalo & Toivanen, 2012; Reynolds, 2012). For example, in Mexico about 78% of the country's employment was generated by SMEs (Daou et al., 2014). In Nigeria, about 98% of all Nigerian businesses were categorized as SMEs with 45% contribution to the nation's gross domestic product (GDP) (SMEDAN & NBS, 2013). Creation of jobs invariably helps with raising the standard of living within any economy. World Bank, (2020) and Hussain et al. (2006) note that SMEs through their various activities have directly and indirectly contributed to the socio-economic growth and development of many countries around the world. SMEs are active players in helping the global financial system function and remain stable (European Commission, 2018; Denis, 2004), and have deliberately led innovative creations and fostered healthy market competition (Block et al., 2016).

Despite the perception of SMEs as a strong driver to economic growth (Naradda Gamage, et al., 2020; UNIDO, 2016; Golovko & Valentini, 2011), SMEs are confronted with capital shortages (World Bank, 2017; Beck & Demirguc-Kunt, 2006). It can be argued that the capital shortages experienced by BG SMEs limits their innovative

potentials (Goujard & Guérin, 2018; Hyytinen & Toivanen, 2005). These firms see access to capital as a huge constraint to growth and development (Angilella & Mazzù, 2015; Smith, 2012; IDAN, 2007), and the requirement of raising debt and/or equity can take several years (Blach, et al., 2020; Rogers 2014; Pederzoli & Torricelli 2010), and sometimes prove impossible.

Naradda Gamage, et al., (2020) and Denis (2004) record that the structure of small and start-up businesses and the reality that these enterprises might not be making profits, and do not own tangible assets at the time could pose a huge challenge in accessing debt. Goldfarb et al. (2012) state that enterprises that are categorised as SMEs are simply risky enterprises to be involved with and are capital starved. World Bank (2017) reports that the financing gap for SMEs amounts to about USD1trillion. Scott & Scott (2015) mention that entrepreneurs have more to do than just invent ideas, they also have the responsibility of being able to obtain external finance to further drive their ideas to fruition and stability.

Acknowledging the importance and potentials of this category of enterprises (SMEs), and as a strategy to reduce the identified financing gaps (Berger & Udell, 2006), there have been, over the years innovative efforts to generate more finance in debt and equity for SMEs (Lam, 2010; Ebben & Johnson, 2006; Cassar, 2004). These funding options are referred to as ***entrepreneurial finance models (EFM)*** (Block et al., 2018).

EFM represent funding options that are available for businesses that need to raise capital through either equity or debt funding or a combination of both (see breakdown in appendix 1). It involves the management of innovative business factors which today includes cash management, business life cycles, survival strategies (Leach & Melicher,

2020), financial and accounting management (Rogers, 2014), technology usage, management structure and contract & covenant terms (Denis, 2004). This finance is raised as equity and/or debt holding structures (Lam, 2010). Over the years, different forms of EFMs have been established to cater for the evolving nature of some SMEs. This research focuses on a specific type of SMEs that have received various entrepreneurial finance funds. The firms in the category of SMEs this research centres on are known as BG SMEs (Knight, 2015; Knight & Cavusgil, 2004) which are described in this research as BG SMEs. BG SMEs have emerged as high performing SMEs with the capacity and drive to rapidly internationalise (Mort et al., 2010). Cavusgil & Knight (2009) and Knight & Cavusgil (2004) in their work have defined born-global firms as firms that engage in the exporting of their business services and products in the early years of their business operations. They add that such firms should be receiving a minimum of 25 percent of their total sales income from their international market. Mostafiz, et al. (2019) emphasizes key elements in the process of BG SMEs, these include rapid and early internationalization by young firms.

The clamour for finance for BG SMEs raises several questions around how important these EFM can be to these enterprises. This research is focused on BG SMEs within Nigeria. Nigeria over the years, has been described as a fast-growing economy with strong economic factors that have attracted foreign direct investment (FDI) with a gross domestic product (GDP) growth of over 6% in 2013 (World Bank, 2014). The Nigerian economic ecosystem is an ideal ecosystem to address the research question as it shares similar economic factors as other emerging economies. Some core similar factors include, population, GDP growth rate, availability of labour force, unemployment rate, technological advancement, political stability/instability amongst others. Nigeria has often been described as the giant of Africa, and it is seen

that the developmental progress of Nigeria could affect the overall performance of the African region (Abubakar & Ogunode, 2021; Sodiq, 2017).

Events following the Second World War led to the global market being liberalized and deregulated, which invariably fostered firm internationalization (Satoglu, 2017). The advancement in technology, communication and transport infrastructure facilitated globalization, thus simplifying global trade, and encouraging Foreign Direct Investment (FDI) (FT, 2019; Satoglu, 2017).

Many business owners and their management teams have run their daily business operations without recourse to the implication of their activities on their employees, to the environment, or the local communities (Lingane & Olsen, 2004). These businesses, therefore, have no mechanisms to weigh the positive or negative impact of their costs and activities. Researchers observe that this trend is beginning to change with more business managers, shareholders, and entrepreneurial financiers starting to create social and ethical goals (Ramos-González, et al., 2021). Some businesses are beginning to integrate social goods into their core vision and mission statements, whilst also creating budgets to help achieve these goals. This raises the question of how businesses can articulate measurement metrics to weigh the return on investment on their social investments. The point of this is to quantify the social value created by a firm (Lingane & Olsen, 2004). There are more businesses globally that have their business goals focused on social and ethical developments rather than the “maximization of shareholders’ wealth” maxim. The need to measure social return of investment (SROI) also lies with firms that are setup for financial profit. For-profit oriented business models are also now including social goals as part of their objectives, for example, car companies are working to reduce carbon footprint each year, thereby investment in cleaner energy and adopting sustainable technological systems. These

conscious efforts today the environment come at a huge cost which in the past have not been numerically calculated to define the impact of such improvements to the bottom line of the company. Corporate social responsibilities (CSR) are also efforts that can be recorded as actions that require SROI values (Chan, et al., 2021; Novia, et al., 2021).

## **1.2 Statement of the Research Problem**

SMEs are the engine hub of several economies, (Bellavitis, et al., 2017), including Nigeria with a significant portion of the country's revenue and employment being generated from SMEs (IMF, 2019; Daou et al., 2014; SMEDAN, 2013; Aduarte & Zanza, 2010). The performance of firms generally and BG SMEs in Nigeria have been linked to these firms' ability to access finance (Brown & Earle, 2015). The problems experienced by BG SMEs in accessing financing and the mortality rate of firms that have accessed entrepreneurial finance in Nigeria has raised questions around the impact of entrepreneurial finance (Cumming & Vismara, 2017). Research shows that over 70% of SMEs fail within the first five years of operations (Akinyemi & Adejumo, 2017; Cao, 2012), with some of these firms reported to have accessed finance within the time. Most SMEs in Nigeria do not survive the first five years of their establishment (Ibiwoye, et al., 2020), with over 80% of SMEs including BG SMEs failing before their fifth year in operation (Eniola, et al., 2015). The failure of these firms causes increased unemployment, lower economic performance, and possible growth in insecurity, which could affect relationships with neighbouring countries. An example of this can be illustrated with the story of Nigeria that slipped into a recession in 2015 which created ripple effects the possibly caused inflation, fall of the currency (Naira) and national insecurity, not just in Nigeria, but also in neighbouring countries including Niger and Chad.



Cumming & Groh (2018) highlight that it is pertinent for other researchers in the field of entrepreneurial finance to investigate how the various funding models existing, impact the outcome of portfolio firms across different regions. This is coming on the heels of the knowledge that the mortality rate of young SMEs remains high despite many of the failed firms receiving entrepreneurial finances.

This research investigates the relationship between entrepreneurial finance models and born-global enterprises to identify the impact of these finance models on the performance and outcome of BG SMEs in Nigeria. The research evaluates performance by measuring the firms' profitability and SROI, while the outcome of BG SMEs was measured by investigating the changes in the firm structure. Understanding how firms have turned out after obtaining various entrepreneurial finance funding will help business owners and policymakers determine the right and suitable finance models for their firms at their different business cycles.

The issues of constraints in obtaining finance and the right finance can also be linked to cognitive bias. Cognitive bias being a behavioural idea of making decisions based on limited information, managers find themselves seeking external finance only from the EFM sources they know, and, on the information, they have of such sources (Matthew & Manuel, 2017). The positions and business cycles, financial literacy could create cognitive bias, which can influence a firm's access to external and invariably their performance.

For BG SMEs, their positions in their business cycle creates limitations where they might not have substantial assets, cash flow or trackable business performance records to access a range of external financing (Nguyen & Canh, 2021). This limitation reduces their chance to access structure EFMs such as IVCs and private equity funds. This

creates difficulties for BG SMEs and can lead to firms accepting funding from any source that is willing to provide to them not considering the impact on their performance and business operations of such funding.

The findings of this research will help in informing the decisions taken by entrepreneurs, business managers, investors, and policymakers; thereby creating a more sustainable environment for BG SMEs. It is also expected that by improving the well-being of these enterprises, countries can benefit from their sustainability through stable job creation, tax revenues, innovations in technology, and other social contributions.

### **1.3 Research Aim**

It is widely believed that obtaining external finance is a critical element in the survival and growth of firms (Brown & Earle, 2017), however, it has been recorded that majority of BG SMEs do not survive beyond the first three years of operations even after receiving entrepreneurial funding (Eniola, et al., 2015).

Therefore, this research aims to critically analyse the impact of EFM on the outcome and performance of BG SMEs in Nigeria. By critically reviewing the EFMs that positively and negatively impact on BG SMEs' performance outcome, these firms can reduce the rate and probability of failure.

### **1.4 Research Objectives**

1. To identify and critically evaluate the different EFM
2. To undertake econometric analysis to establish the relationship between EFM and BG SMEs profitability

3. To critically analyse the impact of EFM on the firm structure (existing management and board compositions) of BG SMEs
4. To undertake econometric analysis to establish the correlation between EFM and the SROI performance of BG SMEs in Nigeria
5. To investigate the investment risk inherent in the relationship of the different EFMs with BG SMEs in Nigeria.
6. To critically review existing theories (agency theory and human capital theory) and develop new theoretical framework that reflects the different risks elements of entrepreneurial finance models and BG SMEs.

### 1.5 Principal Research Question

**Does EFM obtained by BG SMEs in Nigeria add value to their profitability and SROI, and what is the impact on their firm structure?**

The researcher has further broken down the principal research question into three additional questions

*RQ1: Does the type of EFM obtained impact differently on the profitability, firm structure and SROI performance of BG SMEs?*

*RQ2: What is the moderating influence of management experience on the relationship between EFM and BG SMEs' profitability, firm structure and SROI?*

*RQ3: What is the moderating influence of firm size on the relationship between EFM and BG SMEs' profitability, firm structure and SROI?*

## 1.6 Theory and Hypotheses

### 1.6.1 Research Hypotheses

The underlying notion holds that any form of EFM obtained by born-global SMEs positively or negatively impact on their outcome and performance (Kijkasiwat & Phuensane, 2020). This thesis critically assesses the impact of different EFMs on the outcome of BG SMEs' *firm structure* and their *profitability* and *SROI* performances.

The research tested three core hypotheses:

*H1: There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and profitability*

*H2: The type of EFM obtained would directly cause a change in the firm structure of BG SMEs*

*H3: There is positive dependence between the type of EFM obtained and the social return of investment (SROI) performance of BG SMEs*

The hypotheses development is evaluated in more detail in section 3.6 of this research under the research framework.

## 1.7 Data and Methodology

### 1.7.1 Empirical Methodology

The research philosophy adopted in this research is positivism. The researcher believes in the objective process of arriving at the truth and achieving the aim of the research. In line with the positivist approach, the researcher follows empirical methodology by using quantitative methodology. To answer the research questions, data was collected using online questionnaire empirically designed using Qualtrics.

### **1.7.2 Data**

The thesis adopts an analytical online survey questionnaire that was distributed to 1100 SMEs in Nigeria from an aggregated list of SMEs from the Small and Medium Enterprise Development Agency of Nigeria (SMEDAN) and the Bank of Industry (BOI). Data was obtained from 524 firms with 237 responses meeting the defined criteria of born-global SMEs and the finance requirement.

### **1.8 Rationale of the Research**

This research has been designed to critically evaluate the effect of EFM on the outcome and performance of BG SMEs in Nigeria. Understanding the relationship between EFMs and BG SMEs' performance can contribute substantially to improving the growth, sustainability and mortality of BG SMEs and the SME group as a whole (Cumming & Groh, 2018). BG SMEs contribute extensively to the innovation, manufacturing and export outputs of emerging economies like Nigeria (Dar & Mishra, 2020).

Previous literature papers have approached the study of entrepreneurial finance differently. Some research papers have focused on one or two EFMs at a time, for example, Hornuf, et al. (2018), Munari & Toschi (2015), Onishi (2015) and Croce et al. (2013) assess a single financing model while Dutta & Folta (2016), Collewaert, et al. (2010), and Chang (2004) focus on two different entrepreneurial finance models (see table 1.1). Similar literature within the subject area takes the approach of investigating the impact of entrepreneurial finance in one country or two countries, or a single region at a time; an example of this can be seen in Munari & Toschi (2015) research that evaluates the impact of government venture capital programmes in the United Kingdom ("UK"). Croce et al. (2013) focus on six European countries in their research

– Belgium, France, Finland, Spain, Italy and UK. Hussain, et al. (2006) approach their research differently by adopting a comparative study of SME financing in the UK and China. Munari & Toschi (2015) and Collewaert et al. (2010) are in support that there are still few empirical studies that take a regional approach in assessing how entrepreneurial financing models have impacted on ventures. This research expands the typical research focus by critically analysing several EFMs and their impact on the performance and outcome of BG SMEs in the context of Nigeria as an emerging economy (see table 1.1). This research has identified over eight EFMs and will be assessing all that have been used to finance BG SMEs.

**Table 1.1: Literature Assessing EFMs in Regions**

<b>Author</b>	<b>Type of EFM or Area of focus</b>
Munari & Toschi (2015)	GVC
Onishi (2015)	PhVC
Fogel (2001)	Loans, family and friends, project financing and IVC
Buchner et al. (2018)	IVC
Luukkonen et al. (2013)	GVC and IVC
Brander, et al. (2015)	GVC
Engberg, et al. (2021)	IVC and GVC
Hussain et al. (2006)	SME financing in UK and China
Smolarski & Kut (2011)	IVC
Biney (2018)	IVC
Busch (2018)	Accelerators, BAs and GVCs
Bone, et al. (2019)	Accelerators

García-Ochoa, et al. (2020)	Accelerators
Hendratmi, et al. (2019)	Crowdfunding
Havrylchyk & Mahdavi Ardekani (2020)	Crowdfunding
Peter, et al. (2018)	Government grants
Salerno (2019)	Private equity

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Source: Adapted by the Researcher

Globalization and various existing trade agreements have connected the world in different ways; creating situations where events in one country could affect other countries. The activities of BG SMEs which have been made more widespread by ICT impacts on both their country of origin and their trading regions (Cavusgil & Knight, 2015). There are questions around the growth and sustainability of these firms, as Cao (2012) have pointed out, many BG SMEs have access to external finance, however, a large percentage of all SMEs (70%) fail within their first five years. The failure of these firms causes increased unemployment, impacts negatively on economic performance, which invariably lead to the rise of insecurity, which could affect their countries of origin and relationships with neighbouring countries. An example of this can be illustrated with the story of Nigeria that slipped into a recession in 2015 (FT.com, 2017), and how the effects of this have caused insecurity in not just Nigeria, but also in neighbouring countries including Niger and Chad.

A review of existing literature shows that research on entrepreneurial finance models within the context of BG SMEs in Nigeria is novel, and the concept of BG SMEs is still at its infancy stage. A review also shows that there are varying opinions on the impact of EFMs on firms. Zacharakis et al. (2003) were specific when stating that a firm's

environmental ecosystem could affect its business operations and financial management processes. Demil, et al. (2018) believe that the environment is an essential element that should be examined by businesses when developing strategies. Traditionally, research focused on the individual entrepreneur and/or the firm, however, there is now an increased awareness of the impact of the environmental ecosystem and how the elements within an environment can affect business operations (Ratten, 2020). These variances and differences in positions across different ecosystems encouraged the researcher to investigate these phenomena in an emerging economy which plays an active role in the African region. Earlier research by authors such as Buchner, et al., (2018); Zacharakis, et al. (2003) on the investment and business operations within different nations highlights the role factors such as politics, technology, socio-culture, and economics play in determining the successes of enterprises. It is seen that these factors are at different levels in different regions and the combination of these factors at different degrees affect the outcomes of firms. Zacharakis, et al. (2003) argues that regional characteristics are capable of attracting certain resources that may be necessary to foster growth and development of firms and so different regions will attract different resources. Zacharakis, et al. (2003) adds by illustrating the saturation of tech companies in the Silicon Valley – an ecosystem that attracts capital, workforce population, branding, etc. This argument indicates that the performance of firms with the same funding model might be different across regions. The ecosystem highlights the agglomeration impact of entrepreneurial activities which include services and innovation, business clusters, operations of industries (manufacturing, tech, retail, etc.) and regional formations (rural, urban, regional, and national formations) (Audretsch, et al., 2019).



Review of available literature indicates that little is still known about the fundamental operations, behaviours and performances of EFMs in regions and emerging economies (Cumming & Groh, 2018; Munari & Toschi, 2015; Mason & Pierrakis, 2013). The researcher was motivated to embark on this research to help improve the knowledge and applicability of existing theories while developing a new theoretical framework in entrepreneurial finance. This research advances previous research using agency theory (Munari & Toschi, 2015; Fraser, et al., 2015; Croce et al., 2013; Jensen & Meckling, 1976) and human capital theory (Hornuf et al., 2018; Ahlers et al., 2015; Batjargal, 2007; Delmar & Shane, 2006), to highlight the relationships between the different entrepreneurial financing models and the outcome of firms in Nigeria.

Achieving the aim of this research by understanding how firms have performed after obtaining various entrepreneurial finance funding will help business owners and policymakers determine the right and suitable finance models for their firms at their different business cycles. The findings of this research will help in informing the decisions taken by entrepreneurs, business managers, investors and policymakers; thereby creating a more sustainable environment for BG SMEs. It is also expected that by improving on the well-being of these enterprises, the economies of these nations benefit from their sustainability through stable job creation, tax revenues, innovations in technology, and other social contributions.

This research reasons that the environmental ecosystem of a firm can affect its funding opportunities and its performance (Stam & Spiegel, 2016; Zacharakis, et al. 2003). There are different business factors that are influenced by the environmental ecosystem and conditions of entrepreneurs which require concepts and solutions to be tailored to specific environmental ecosystems (Ratten, 2020). In assessing the performance and outcome of BG SMEs in Nigeria that have obtained one or more of

the entrepreneurial finance models stated in this research, it is pertinent to understand the environmental contexts of this region and similar regions.

### **1.9 Contributions of the Research to Knowledge**

The post-investment stage of an investment process is largely under-researched (Hoyos et al. 2017; Politis, 2008). There have been various research works done on the pre-investment stage of financing, evaluating the features of investors and investees but not many on the performance of accessing different entrepreneurial finance models. There are several research works that point that access to finance is a huge problem facing SMEs and start-ups, however there are few rigorous studies that investigate the impact of the different obtainable EFMs on the performance of BG SMEs and start-ups when they receive it (Hornuf, et al. 2018; Munari & Toschi, 2015; Mason, 2007). Firstly, this research will be leading research in critically examining and providing understanding on several EFMs and BG SMEs' performances.

There are no previous research studies that have assessed the impact of EFMs on the outcome of BG SMEs in Nigeria. Many previous research studies have tried to identify how SMEs have been financed with a focus on the pre-investment stage of the financing journey. Secondly, this research, from all possible indications, focuses on the post-investment stage of BG SMEs, determining how their choices of EFM link to the performance of their firms. These performances are measured by assessing the firm's market share, return on equity (ROE), return on asset (ROA), and the social return on investment (SROI). Thirdly, the outcome of the firm structure is also examined and the added value of each EFM is recorded in this context. It is of great interest to understand how the business models of BG SMEs and the current pandemic affect the outcome of businesses and the entrepreneurial financing models.

Finally, this research will critically review existing theories (agency theory and human capital theory) and develop new theoretical framework that reflects the different risks elements of EFMs and BG SMEs. The development of theories is a fundamental aspect of research development and will significantly improve the understanding of EFMs.

#### 1.10 Research Structure

This research is structured into seven chapters. **Chapter 1** introduced and summarized the overall research work.

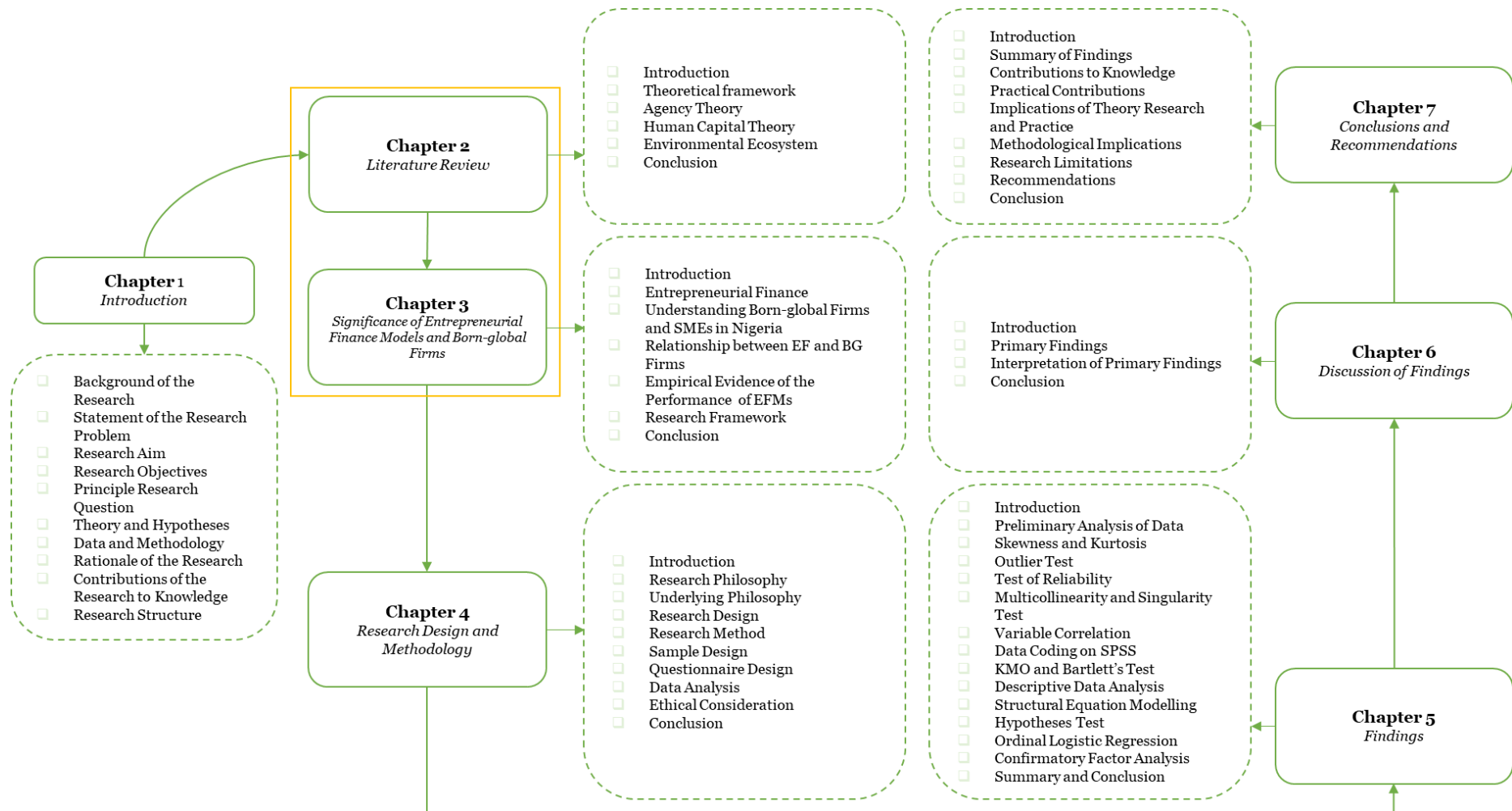
In **Chapter 2** a detailed theoretical review of literature is provided of different facets of the research study (see figure 1.1). The chapter highlights key theories in entrepreneurial finance and analyses these in the context of research, and the current model of EFM and BG SME interrelations within an environmental ecosystem - Nigeria. The environmental context is explored, with key economic and political factors discussed.

**Chapter 3** discusses the concept of entrepreneurial finance and the types of EFMs. Background information of SMEs and BG SMEs in Nigeria were given. The chapter goes further to assess the determinants of BG SMEs whilst evaluating the role of new business models, technology, and the elimination of trade barriers. In addition, chapter 3 evaluates the performances of different EFMs identified in current existing academic literature. The environmental context is introduced by providing an overview of different government interventions in providing funding to BG SMEs in the region.

In **Chapter 4**, the researcher explains the systematic design of the research. The positivist philosophy of the researcher is described, alongside the methodology. The research being quantitative research, adopted questionnaire as the tool of data

collection, and elaborates in detail the survey design, sample design and measurement metrics of the research. The chapter also sets out the method of data analysis, and the ethical considerations of the research.

**Figure 1.1: Research Structure**



*Source: Developed by the researcher*

**Chapter 5** presents the research results and findings from the systematic analysis of the data collected using questionnaires that were distributed to BG SMEs in Nigeria.

In **Chapter 6**, the research discusses the findings of the research while detailing the relationships with the different hypotheses presented.

**Chapter 7** concludes the research work by giving a summary of the key points and findings of the research. This chapter also highlights the practical and academic contributions of the research with specifics of the implication to theory and methodology. The researcher experienced some challenges and limitations which were share in this chapter. Finally, some useful recommendations were shared for future research development around methodology, practice, policy, obtaining and utilising EFM and research.

An **appendices section** is included in this research to provide additional information and illustrations. Each appendix has been clearly titled, with each area referenced and linked within the different chapters.

## Chapter 2: Literature Review

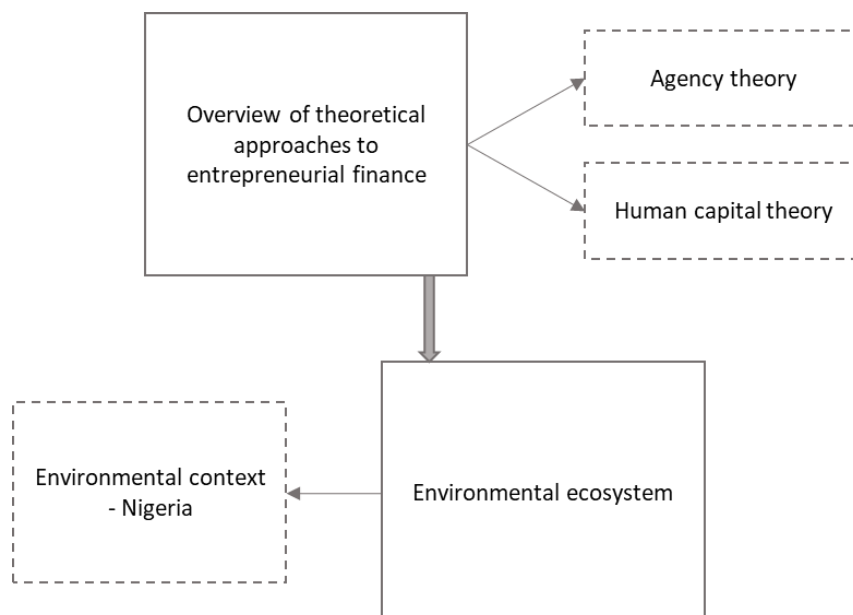
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### 2.1 Introduction

This chapter discusses two broad areas which include the theoretical approaches to entrepreneurial finance, and the environmental ecosystem (see figure 2.1). Building on Agency Theory and Human Capital Theory, the research evaluates the potential and directions of the relationships between EFMs and BG enterprises. This research in this chapter examines the management teams capacity, knowledge and expertise under the human capital theory and the interactions between the different EFMs and BG SMEs and the agency cost that could influence their relation and thus performance.

The environmental ecosystem highlights key factors in the macroeconomic system of Nigeria that exist and influence the operations of businesses and their performances.

**Figure 2.1: Graphic illustration – Two Broad Areas of Chapter 2**



*Source: Created by the Researcher*

## **2.2 Theoretical Framework**

### **2.2.1 Overview of Theoretical Approaches to Entrepreneurial Finance**

The frontline notion about the relationship between EFMs and BG SMEs is that both aim for the success of the firm, however, the approach to achieving this goal differs (Mustapha & Tlaty, 2018). Theories have been used to guide this research to help simplify the complexities that exist in this study (Fleury & Sidani, 2019). This research has adopted the agency theory and the human capital theory to develop, discuss, predict, test and explain the phenomena and concepts of EFM, BG SMEs and firm performance.

The rationale in adopting the agency theory and the human resource theory is supported by literature in the subject area and the nature of the aim and objectives of this research. In addition, two core areas in theory in the activities of EFMs are the interactions between the fund provider (principal) and the BG SMEs (agent) (Munari & Toschi, 2015) and the financial and resource management capacity of the management team (Adebiyi, et al., 2017). The literature highlights that there are other theoretical approaches to studying entrepreneurial finance, such as social dynamics, entrepreneurial cognition, information economics, and social network theory (Drover, et al., 2017). This research identified eight relevant journal papers published within the last ten years and theories used (see Table 2.1 and appendix 8.1) in the field of entrepreneurial finance models. The agency theory and human capital theory have been utilized more than other theories in entrepreneurial finance research papers as they play a significant role in developing the framework of relationship between management and shareholders as well management capacity.



**Table 2.1: Relevant Journal Papers in the Last 10 years**

<b>Journal Paper</b>	<b>Theories</b>
(Scarlata, et al., 2017)	Human capital theory
(Munari & Toschi, 2015)	Agency theory Human capital theory
(Fraser, et al., 2015)	Agency theory Pecking order theory
(Hornuf, et al., 2018)	Human capital theory
(Croce, et al., 2013)	Agency theory
(Dushnitsky & Shapira, 2010)	Agency theory
(Alexy, et al., 2012)	Social network theory Extant theory
(Mustapha & Tlaty, 2018)	Agency theory Stewardship theory

*Source: Created by the Researcher*

The agency theory and the human capital theory highlight theoretical ideas that state problems in the interaction of stakeholders in social sciences, how the problems and conflicts exist, and how they can be managed or resolved. Section 2.3 and 2.4 elaborate on both theories and their application to manage the intricacies of EFM interactions with BG SMEs in Nigeria (Fleury & Sidani, 2019).

### **2.3 Agency Theory**

According to Jensen & Meckling (1976) and Kato & Tsoka (2020), the agency theory highlights the conflict of interests that exists in the relationship between the principal and the agent. The agency theory is widely used across several academic fields, and in the application to entrepreneurial finance models, has been adapted to reflect the conflict of interest between the EFM (financier/investor/shareholder/principal) and the BG SME (investee firm/management/business owner/agent) (Mustapha & Tlaty, 2018).

### **2.3.1 Agency Theory and Entrepreneurial Finance Models**

Mason (2007) concurs with the idea that agency problem does exist in the interactions between business angels and investee businesses. They emphasize that for business angels to tackle any form of agency problems, they would be required to play more active roles in the businesses they provide finance by increasing their monitoring of these businesses. This concept has been argued to be the driver for some entrepreneurial finance models that tend to influence the management and board structures of the firms that they invest in.

Hoyos et al. (2017) explains that in the case of information asymmetry, the business owners/management team (agent) will more likely have better knowledge of the quality of the business and certain factors within the environmental ecosystem which the BA or other EFMs (Principal) could find hard to understand thereby leading to a situation of adverse selection by the EFMs. For example, a BA EFM might face a moral hazard risk, where the business owners/management team of the investee business redirects funds provided for the business for personal gains (Hoyos et al., 2017). On the other hand, and from the perspective of the funded firms there is the fear that using certain EFMs to finance their business could lead to the managers and business owners losing control over their investments (Pang, et al., 2021; Amit, et al., 1998).

The inefficiencies in the principal-agent relationship highlighted by the agency theory bears consequences that could affect the welfare of both parties (Jensen & Meckling, 1976). It, therefore, becomes important to create solutions to deal with any opportunistic behaviours that might arise in external financing and reduce the cost to shareholders' wealth (Nofsinger & Wang, 2011). There are indications from previous research works, and reports on VCs that they are able to manage conflicts of interests by instituting strict financial contracts and covenants (Ewens et al., 2022; Fu et al.,

2019; Denis, 2004). Typically, by exercising due diligence, some EFMs can deal with information asymmetry as has been indicated (Ewens et al., 2022), however, the contractual solutions differ across various firms and sizes (Mustapha & Tlaty, 2018). This is not the case for BAs as they unlikely to engage in extensive screening (Lahti, 2011). Though BAs have business experts and industry experience (Hoyos et al, 2017), they do not have the analytical resource and required capacity to create a detailed contract or covenant, to manage any agency problems (Carpentier & Suret, 2015).

Gompers & Lerner (2001) and Denis (2004) clarify that VC firms are in a better position to deal with hazards and adverse selections through their model of operations. They are structured and are more equipped to deal with agency risk. In addition to using contract and covenants, VCs tend to stage their investments in businesses (Hoyos et al, 2017), using each stage to better understand and control the activities of investee businesses. They also get involved in decision making by gaining board rights (Hoyos et al. 2017). That notwithstanding, Conti et al. (2013) and Wong et. al. (2009) believe that BAs still have their control strategies that work for them. Conti et al. (2013) mentions that by looking at how much equity has been inputted into the business by the business owners/management team business angels can deduce the seriousness and commitment of the investee business owners. Wong et al. (2009) adds that business angels take steps to ensure that all interests are aligned by getting the business owners to own more stake in the business. Business angels can also become active participants in the investee company (Hoyos et al., 2017).

Business angels place the overall quality and strength of a business's management team at the top of their screening process, that in itself reflects the possible existence of agency problem (Mason et al, 2017).

From the screening process of the BAs, it is assumed that they aim to reduce any potential conflict of interests which exists or might spring up. The agency theory highlights possible conflict of interest between the principal which in this case is the business angel and the agent, which is the business seeking entrepreneurial funding (Mason et al. 2017). This conflict of interest could include the agent seeking to achieve its personal goals which might not be in line with the principals' objectives, thus causing a financial or reputational damage to the principal. On the contrary, Kelly (2007) strongly argues that this is not the case and unlike the notion of an agency problem existing, the relationship of the principal (business angels) and the agent (the business) is characterized by trust.

Mason et al. (2017) and Hse et al. (2014) also propose that the principal and agent relationship between the BAs and the businesses seeking funding could also mean building on the agency theory the presence of informative asymmetry. The presence of information asymmetry does mean that there are certain key pieces of information which are not available to the principal (EFM), which could be costly to obtain (Mason et al., 2017), thus increasing the transaction costs for the EFM. Van osna brugge (2000) argues that BA tend to address the issue of information asymmetry and indeed agency problem by getting directly involved in the business they invest in. This infers that BAs provide value-added services alongside providing entrepreneurial finance (Politis, 2008). This idea of BAs interfering with the management and operational processes of their investee firms justifies the need for this research to evaluate the impact of the different EFMs identified on the management and board structure (firm structure) of BG SMEs (Bessière, et al., 2020). Further understanding of how the agency theory is applied in this research is a measure of the firm structure through the

possible impacts the EFMs have had on the management and board structures. These firm structures also indicate the value-added element of the EFM to the firm.

The relevance of agency theory in the financing of firms links largely to how managers run the operations of a firm which assumes more risk in the market. This invariably can influence the managers' choice of EFM. The agency theory hints at the firms' management team not favouring bank loans or debt financing as much as shareholders will (Osuji & Odita, 2012; Boodhoo, 2009). The level of conflict between the management team and the shareholders could be reduced by increasing debt in the capital structure of a firm (Onadopo & Kokota, 2010). In the provision of loans by banks, banks can deal with agency problems and information asymmetry by raising lending margins in a bid to balance the inherent risks (Khan, 2020). This again suggesting the impact of the agency theory in the relationship framework of EFM and BG SME performance. Kato & Tsoka (2020) specify that contracts are used by EFMs, for example VC, to guard against principal-agent conflicts.

## **2.4 Human Capital Theory**

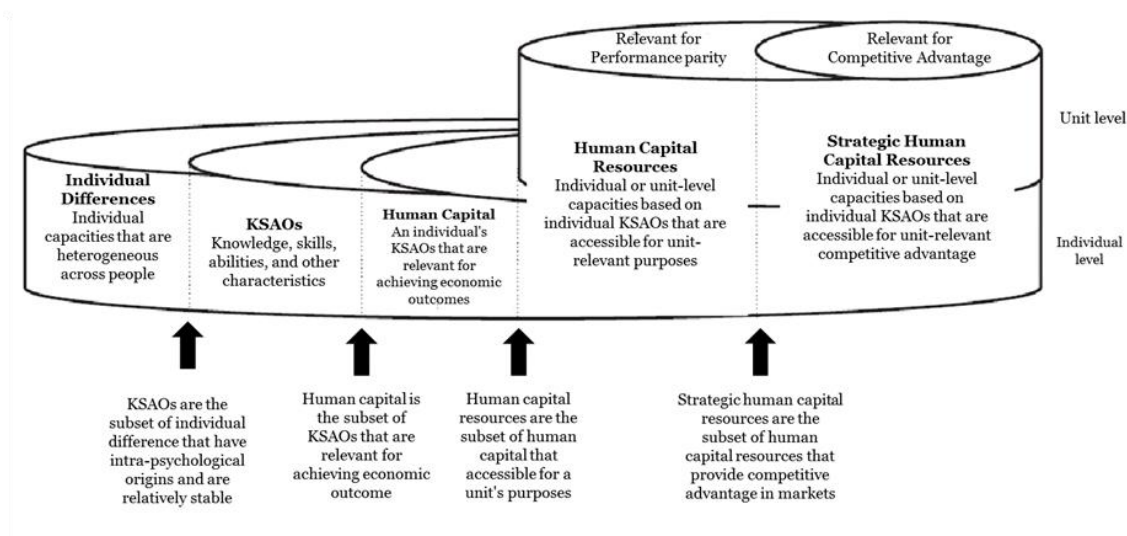
The outcome of BG SMEs that have received entrepreneurial finance can be evaluated using the human capital theory (Hornuf et al., 2018; Munari & Toschi, 2015, Becker, 1964). The human capital theory holds that the outcome of firms differs to the level of the skills and competences the firms possess. This implies that the quality of the value EFMs are able to add to BG SMEs is subject to the extent of the skills and competence the financing firms own (Zarutskie, 2010). This can also be said of the quality of the management of BG SMEs being critical to the outcome and success of its management of key resources within the organisation. Savitri & Syahza (2019) point that the human resources and capabilities are key elements in developing strategies that guide firms. Zarutskie (2010) notes that the differing types of education and professional

experiences within the industry are strong factors that could influence the outcome of firms. Savitri & Syahza (2019) concur, noting that firms have a collection of unique resource and capabilities that give them competitive advantage in the markets they compete in.

Munari & Toschi (2015) highlight the importance of human capital in the performance of firms by describing the profound implication it takes in managing resources at a regional level. The regional level depicts the operation of BG SMEs internationally and within multiple regions. Thomas et al. (2013) defined human capital as "people, their performance and their potential in the organisation". Jaaskelainen et al. (2007) point that firms make significant efforts to attract and retain quality skilled labour by offering mouth-watering compensation structures. They add that firms that are unable to attract the right human capital suffer from an adverse selection which leads to a lower opportunity cost. Luukkonen et al. (2015) and Knockaert, et al. (2010) reveal that investment managers of captive entrepreneurial finance models which include GVC rarely get involved in additional value generating activities beyond providing finance. Some of the value additions noted include, improving the management structure, providing monitoring and guidance, or developing marketing networks for their portfolio firms (Luukkonen et al., 2015).

Ployhart developed a contemporary framework that can be used strategically for human capital management and measurement theory (CIPD, 2017) (see figure 2.2).

**Figure 2.2: The Human Capital theory**



Source: (CIPD, 2017)

CIPD (2017) describes knowledge as the most important human capital resources a firm owns. Several other human capital resources build on the knowledge and capacity that developed over time. Human capital resource has been defined by Ployhart, et al. (2014) as either being a collective (unit-level) or individual capacity that are driven by knowledge, skills, abilities, and other characteristics (KSAOs) and accessible for unit-level utility purpose which are best practices equivalent. Approaching the idea of human capital from a different perspective, Batjargal (2007) views human capital as adding value to a firm through social networks. Social networks break barriers created by information asymmetry as financiers within the same social network as BG SMEs' management teams can obtain valid information socially thus increasing the trust and willingness to provide finance (Chua, et al., 2011, Denis, 2004). Management teams with more experienced managers would likely have a wider and stronger social network overtime. Batjargal (2007) adds that the relationships individuals have with their networks and third parties in their network circle offers more opportunities to accessing certain entrepreneurial finance, which could invariably impact on the

outcome of firms. Yuliarmi, et al. (2021) indicate that the financing constraints faced by SMEs can be attributed to the low quality of the firms' human capital and marketing competencies. The potential influence of human capital and social capital in the outcome of firms is that it gives enterprises access to scarce resources (Batjargal, 2007).

Applying the human capital theory in entrepreneurial finance models, Hornuf et al. (2015) reviews the impact of the quality of a firm's management team and its ability to obtain finance and its performance over time. Hornuf et al. (2018) and Ahlers et al. (2015) observe that human capital plays a relevant role in determining the outcome of firms. They note that the human capital theory rates older managers higher than younger managers, stating that older managers are more likely to possess better industry and leadership experience. This invariably could be translated to an ability to create more positive outcome for their firms. The survival and growth of SMEs can be traced to the managerial experience and skills of the managers of the firms (Forkuoh, et al., 2016). This has made it relevant to test the casual significance of management experience on performance and outcome of BG SMEs. BG SMEs are faced with the challenge of not having the right management team and not focused on training development for their staff. BG SMEs and SMEs inability to consistently train their team means they fail to increase the skills and expertise of their teams which in turn leads to deficiencies in relevant knowledge to create and apply strategies for their firms (Matchekga & Urban, 2013). Research works have recorded that the training and development schemes provided by SMEs and BG SMEs are substantially lower than trainings provided by large firms for their employees (Susomrith & Coetzer, 2013). This could impact on the dynamics of the funding and performance of BG SMEs,



emphasising on the quality of management and their ability to apply the financial resources (external finance) provide by EFMs (Savitri & Syahza, 2019).

The human capital theory advocates for a knowledgeable population or workforce, positing its correlation to productivity (Olaniyan & Okemakinde, 2008). Employee and management capacity can be enhanced through formal and professional training, workplace developmental trainings and on the job/hands on practical experience (Buta, 2015). The knowledge and experience of management teams and employees are valuable to the application and management of growth strategies (Zapalska & Brozik, 2013). The strategies, the decisions as to the type of EFM a firm obtains, and the management of all resources developed in a BG SME is influenced by the human capacity which invariably impacts on the performance of these firms (Savitri & Syahza, 2019).

#### **2.4.1 Human Capital Theory and Entrepreneurial Finance Models Performance**

In research conducted by Scarlata, et al. (2016) to assess the effect of management team experience on the commercial and social performance of philanthropic venture capital (PhVC), they find that the commercial and social experiences of the management team improves the financial performance of firms. Beckman & Burton (2008) notes that entrepreneurial opportunities can be better identified and exploited by management teams with vast experiences and knowledge. While assessing human capital in traditional venture capital firms, Zarutskie (2010) states that the accumulated experiences of management teams over the years enables them to build knowledge and expertise within their specific industries which helps them assess more accurately, risks and reward opportunities. Walske & Zacharakis (2009) add that top management teams that have prior experience in fundraising activities for example in any venture capital finance raising would likely fair better in future fundraising and

deal structuring. The importance of having high quality and experienced human capital applies to both the EFM financing team and the investee firm. An experienced EFM financing team have the potential of managing their investee firms and addressing unexpected market risk when they arise (Scarlata, et al., 2016). For the different EFMs that play active roles in the firms they provide financing to, they can detect through years of experience garnered when and how firms can grow and ultimately improve their performances (Zarutskie, 2010). The human capital theory which advocates for the development of knowledge and skillsets also allows top managers of EFM teams to mitigate and reduce agency risk (Scarlata, et al., 2016). Experienced managers become well equipped to spot behaviours that are opportunistic and activities that could cause agency problems.

Human capital plays a significant role in BG SMEs. There is a long-lasting impact of founders and management decisions on the development of new ventures (Scarlata, et al., 2017; Unger, et al., 2011). Measuring the impact of human capital on firm financing, Scarlata et. al. (2017) measures specific work experiences built by top management teams. Barbi & Mattioli (2019) in their study of human capital and crowdfunding agree that the quality of human capital is a relevant factor in describing a venture's quality. The professional experience of a firm's team members have an influencing impact on the capital raised in crowdfunding in addition to the number of financiers willing to back the firm's initiatives (Barbi & Mattioli, 2019). Scholars believe that investors use human capital to assess a firm before deciding to provide finance as human capital is important in a firm's success (Ahler et al. 2015; Unger, et al., 2011). Similar to the role human capital plays in crowdfunding, firms with experienced founders, and management teams attract the attention of other EFMs, for example, BAs, IVCs, etc (Gimmon & Levie, 2010). Focused on the educational level of

human capital, Barbi & Mattioli (2019) find that the number of investors in a crowdfunding process increases when a single team member with a higher level of education is added. Lehtimäki & Lehtimäki (2016) in their own research notes that there is no immediate effect with an addition of individual capital, however, the effect is generated in the long run. They however, see an immediate impact on performance with the addition of organizational capital. Arguing against the impact of higher educational qualifications of human capital on firm performance, Baumol (2004) believe that higher educational qualifications can impede innovation and the creativity of managers. Higher education appears to be more valuable to larger firms who are more inclined to using research and development type resources but not to SMEs (Baumol, 2004).

Several research works that study the importance of human capital in the relationship between firm financing and firm performance acknowledge that human capital can generate a higher effectiveness overall (Nguyen, 2020; Khan & Quaddus, 2017).

The environmental ecosystem is perceived to have a macro impact within a geographical location which can determine the broad outcome of firms in that boundary or jurisdiction (Weaver, et al., 2011). There are several dynamics that shape inputs and outputs of businesses. For example, regulations, economic conditions, technological advancement, export and import activities, etc. This can be conceptualised using the PESTEL (Political, economic, socio-cultural, technological, environmental, and legal) model (Jabeen & Mahmood, 2014). However, Lawal et al. (2018) posit that firms with a management team with the right capacity and experience, such firms can reduce the negative effects of the environmental ecosystem they operate in the drive to enhance the performance and outcome.

This section has discussed how the human capital theory is developed around entrepreneurial finance and the operations of BG SMEs functioning in a specific geographical location with several environmental factors within the ecosystem. The next section builds the understanding of environmental ecosystem and the environmental context of Nigeria in the research.

## **2.5 Environmental Ecosystem**

An ecosystem is a composition of various entities, that must exist for it to function properly (Ratten, 2020). This is just like a system with different parts working at different levels but contributing to the sum of the whole system. Susan & Acs (2017) described the ecosystem as a network of entities with varying behaviours interacting with each other but can have different sets of interdependences in different environmental contexts. An entrepreneur can find themselves in different contexts and these contexts could include the region they operate, the business cycle (Hussein et. al., 2006), the entrepreneurial cycle (Ratten, 2020), and each of these contexts have different levels and types of information (Ratten, 2020). To put it differently, the entities of an ecosystem can change depending on the environmental conditions (Ratten, 2020).

A review also shows that there are varying opinions on the impact of entrepreneurial finance models on firms. Zacharakis et. al. (2003) were specific when stating that a firm's environmental ecosystem could affect its business operations and financial management processes (see figure 2.3). These variances and differences in positions across different ecosystems incited the researcher to investigate these phenomena in a unique ecosystem of a developing market (Nigeria). Earlier research by authors such as Buchner, et al., (2018); Zacharakis, et al. (2003) on the investment and business operations within different nations highlights the role factors such as politics,

technology, socio-culture, and economics play in determining the successes of enterprises. Emerging economies like Nigeria have a high level of low-quality human capital (Acs & Virgill, 2010), they are faced with mixed level success in innovation (Bradley, et al., 2012), and typically have weak institutions. It is seen that these factors are at different levels in different regions and the combination of these factors at different degrees affect the outcomes of firms. Zacharakis et. al. (2003) argues that regional characteristics are capable of attracting certain resources that may be necessary to foster growth and development of firms and so different regions will attract different resources. Zacharakis, et. al. (2003) adds by illustrating the saturation of tech companies in the Silicon Valley – an ecosystem that attracts capital, workforce population, branding, etc. This argument indicates that the performance of firms with the same funding model might be different across regions. With an estimated population of 200 million people, Nigeria is seen to have a large viable market that could support businesses through consumption and human capital provision.

The environmental ecosystem includes the macro factors that could impact on the outcome of firms. These macro external forces are known and conceptualised as PESTEL which are acknowledged to be beyond the direct control of these BG SMEs (Jabeen & Mahmood, 2014). In the broad composition of the environmental ecosystem, the formal and informal institutions are vital deciders in firm performance and outcome (Bhat & Khan, 2014). For example, the development of formal institutions such as financial services sector influences the quality of human capital and overall entrepreneurial activities (Dutta & Sobel, 2018). There is an indication that the various elements within an environment are specific and unique to that ecosystem. Tsujimoto, et. al. (2018) notes that firms are impacted by the platform management external factors which include activities of suppliers, the competition, complementors

and buyers (customers). Just like the external forces within the environmental ecosystem that could impact on the outcome of born-global firms, there are also factors in the ecosystem that could also affect the operations of entrepreneurial finance models. Drover, et al. (2017) mentions that business owners/managers react to different entrepreneurial finance models based on various factors, for example, their cognitive bias, and their knowledge of the model.

Review of available literature indicates that little is still known about the fundamental operations, behaviours and performances of entrepreneurial finance models in developing regions such as Nigeria (Cumming & Groh, 2018; Munari & Toschi, 2015; Mason & Pierrakis, 2013).

This research reasons that the environmental ecosystem of a firm can affect its funding opportunities and its performance. Zacharakis, et. al. (2003) in their research highlighted that firms' environmental ecosystem had a positive correlation to their financing options and opportunities. In assessing the outcome of BG SMEs in Nigeria that have obtained one or more of the EFMs stated in this research, it is pertinent to understand the environmental contexts. On the other hand, the way businesses operate can be affected by the environmental ecosystem they find themselves. For example, culture and religion play key roles in several countries and can determine the beliefs and ethics of business owners and managers which can affect their operation concepts (Daniels et al., 2019). India has a large population of Hindus and Muslims who maintain religious believes around certain products. The sale of pork and beef by McDonalds in India is highly limited to avoid offending these religious groups (Daniel et al., 2019). These changes in the business model of McDonalds will be seen in other countries, for example, the United Kingdom. Nigeria has a population mixed with several religions with Christianity and Muslim being the two main religions. Islamic

banking activities have a significant presence and consideration in the investment activities of several individuals including non-Muslims (Ezeh & Nkamnebe, 2020). Again, this brings to the spotlight the need to investigate outcomes within specific environmental contexts with unique factors.

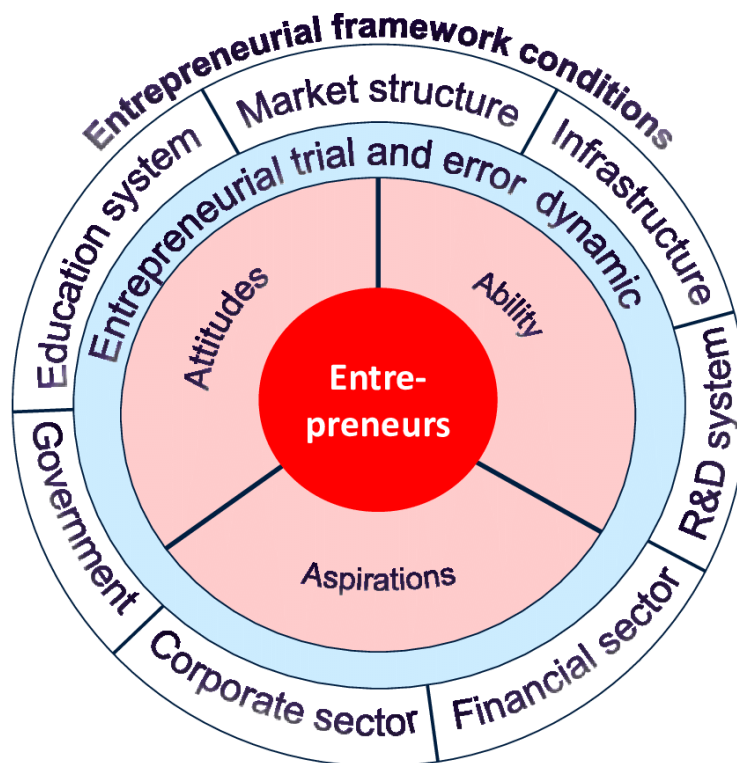
Acs (2016) and Acs et. al. (2014) alludes that an entrepreneur operates within an environmental framework, and the required knowledge to perform as an entrepreneur are entrenched in the entrepreneurial ecosystem framework. This idea of the entrepreneurial ecosystem focuses on the entrepreneur as an individual, aiming to isolate their performance as a function of their attitude, ability and aspirations rather than looking at the macro external factors (Amuna, 2019). Jones & Ratten (2020) express that the world is becoming more knowledge-based with emphasis on how information and communication has been enhanced over the years. Entrepreneurs and businesses are being viewed by how much knowledge they have and how they further develop knowledge and access information. It has become increasingly important that businesses can construct an effective system that encourages the circulation of information that translates to knowledge (Jones & Ratten, 2020).

Research papers explored highlight the impact of the ecosystem on the performance of firms and entrepreneurs (Daniel et al., 2019; Lawal, et al., 2018). This research embraces the concept of entrepreneurial ecosystem to capture the dynamic ecosystem and its changing environmental structure. There is the understanding that the interactions and relationships highlighted in figure 2.3 can be pronounced or suppressed depending on the environmental ecosystem. Lawal, et al. (2018) in their research investigate the effect of the entrepreneurial climate on the performance of firms. Their research further highlights how the level of management competency is used to reduce the negative complexities of the environment within firms. They

measure the environmental ecosystem construct using five broad areas – government incentives, informal networks, bureaucratic processes, structural support and risk taking. Their findings support the idea that firm performance can be influenced by the environmental ecosystem.

Taking an individualistic view of the ecosystem is focusing on the entrepreneurial ecosystem. Figure 2.3 below is a design of all components that make up the entrepreneurial ecosystem.

**Figure 2.3: Entrepreneurial Ecosystem**



Source: (Amuna, 2019)

The concept of entrepreneurial ecosystem helps illustrate the human capital theory used in this research. There have been various definitions of entrepreneurial finance over the years by academics (see appendix 5.5). Audretsch & Link (2019) explain that human capital is a good link to the underpinning idea of the entrepreneurial



ecosystem. The concept of entrepreneurial ecosystem at the individual level and as described by Acs (2016) views the knowledge and capacity of the entrepreneur in conducting their business. This concept links with the human capital theory to ascertain how entrepreneurs and their businesses perform based on their knowledge, their access to information and their overall application of their knowledge. Tracy (2019) denotes that the single most important factor that determines the outcome of a business, whether it becomes a success, or a failure is leadership. Hagen (2019) breaks this down by listing poor business and financial planning, poor marketing and poor management as factors that lead to business failure. The application of these four factors is a function of the quality of the leader.

Braunerhjelm et. al. (2018) further explains that the knowledge to apply the relevant information and skill is embodied in the entrepreneur and their team.

Discussing the link between the environmental ecosystem and external financing of firms, Kimmitt, et al. (2016) believe that in markets with less-developed economic institutions the type of funding available will differ with many new ventures more likely obtaining microcredit. They argue that these poor institutional structures are caused by insistent corruption and regulatory and legal frameworks. Microcredit within these institutions is created to support firms with constrained capabilities.

### **2.5.1 The Environmental Context – Nigeria**

The area called Nigeria today came into existence in 1914 when the Northern and Southern protectorate was amalgamated. The region was colonized by the British up until October 1st, 1960, when the country was given its independence (CIA, 2021).

Nigeria is ranked 29th of the largest economies in the world (Statistics Times, 2019). Nigeria has an estimated population of 202 million (World Bank, 2021) and is Africa's

most populous country and is seen as the giant of Africa. The African Development Bank has stated that the country is endowed with an expanse of arable land for farming and several natural resources with its major export in crude oil. Nigeria is a country that has depended majorly on oil for its revenue. This over dependence on oil has been blamed as the cause of the country's difficulties and economic recession (Ozoro, 2019). The World Bank (2019b) suggests that Nigeria's excessive dependence on oil revenues has posed a lot of risks to the economy and has also made the government appear ineffective. Despite Nigeria being a huge producer of oil, the country still imports finished products which subjects the citizenry to higher prices for gas products (Okorie, 2018). Which is not a true reflection of the country's endowment of natural resources (Shobande & Enemona, 2021).

Oil prices around the world have been volatile which has left the revenue of the country being volatile as the country depends majorly on oil for its revenues. This has weakened the nation's currency and its budget requirements. These environmental factors are seen to influence several macroeconomic indices which could affect the actions and reactions of entities within the clime in relation to performance. Nigeria only recently emerged from a recession but has had an average GDP of 2.0 since 2014 up until 2018 (EIU, 2019). As the country fights to improve its economic outlook, the nation remains bedevilled with insecurity across several regions.

SMEs in Nigeria play a valuable role in the growth and development of the economy, with the creation of new jobs, revenue generation in taxes and local capital and fostering innovation (SMEDAN, 2013). SMEDAN (2013) notes that amidst the extensive contributions of SMEs, they remain a vulnerable and dynamic sector which requires sufficient support and an enabling environment. Firms in Nigeria like in many emerging markets face unique difficulties, (for example, lack of adequate capital,

poor export trading platforms, power/energy outage, and unstable currency exchange rates) in their quest in global integration and business internationalization (Puffer, et al., 2016). Nigeria has been chosen as the environmental context of this research as it has unique institutional factors that reflects many other emerging economies. These factors include the uncertain political climate that creates additional risk for business owners and investors, the socio-cultural tensions, infrastructure limitations, information and technological constraints, economic policies, and general macroeconomic constraints of doing business in Nigeria that affects national development and the performance of both small and large enterprises (Falahat, et al., 2018).

In 2014, Nigeria was classed as a top interest investment area in the world as it was grouped as part of the MINT (Mexico, Indonesia, Nigeria, and Turkey) economies (Financial Times, 2015), which pointed to strong performing economic indicators as an emerging economy.

According to the Financial Times, FT (2015) there was a growth of interest in 2014 when the former Chief Economist at Goldman Sachs, Jim O'Neil who created the BRICS (Brazil, Russia, India, China and South Africa) investment region, began to champion the MINT economies as a prospective investment region. This also stimulated the interest of researchers (for example, Cumming & Groh, 2018; Murray, 2015; Munari & Toschi, 2015) in trying to understand the key variable factors of these investment ecosystems.

The MINT economies are described as emerging economies (Pariona, 2018). The MINT group is characterised by a large and young population, healthy growth rates, fast growing middle class and entrepreneurial cultures (FT, 2015). The Financial

Times of 2015 explained that the countries were grouped together as an economic region due to them exhibiting similar growth trends in GDP, population of young people, technological awareness and their attitude towards new ventures. This research noted that the similarities identified by Jim O'Neil reflected the appreciation rates rather than similarities in actual sizes in 2013.

The age distribution in the population composition of a nation is a significant determinant of the nation's economic performance (United Nations, 2011). CIA (2021) conveys that the age distribution of the Nigerian population includes 41.7% of people aged 0-14, 20.27% of 15–24-year-olds, 30.6% of 25–54-year-olds, 4.13% of people between 55-54 years and just 3.3% of the population is 65 years and over. These numbers reflect a youthful population with growth potentials. Over a decade ago, Rheault & Tortora (2008) observed that many youths in Nigeria were aiming to become entrepreneurs. Data from the BarterNG reports that there are over 41 million enterprises operating in Nigeria (BarterNG, 2020). With the growth of SMEs and the access to more growth finance, the research asserts that the number of BG SMEs and entrepreneurs has certainly gone up.

Over the last six years, the MINT economies have faced different economic challenges that have affected their economic growth. Mexico saw its GDP growth drop from 5.1% in 2010 to 2.85% in 2014 to 2.6% in 2016 (World Bank, 2021c). Nigeria experienced a recession in 2016 (World Bank, 2021), and only continues to recover from the pang of the crisis only to be faced with the COVID pandemic which has caused a strain to the global economy. The annual GDP growth which averaged 7% between 2000 and 2014 dipped to 2.7% in 2015 and further down to -1.6% by 2016 (World Bank, 2019b). The World Bank (2021b) reinforces that there needs to be a deliberate effort from the

government to increase the access of growth finance to BG SMEs to be able to compete and be more productive.

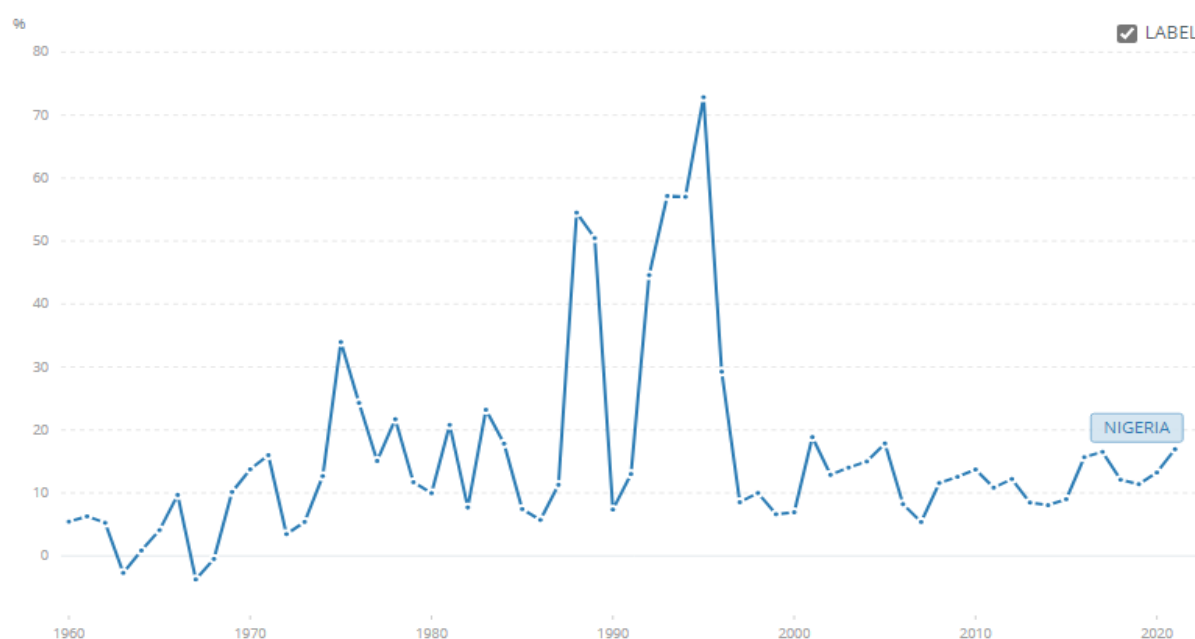
#### **2.5.1.1 Economy and Politics**

In its first thirty-nine years of being independent, Nigeria was plagued with the interference of military rule (CIA, 2021). Nigeria has stayed as a democracy since 1999 (CIA, 2014). Despite being branded as the giant of Africa and ‘big brother’ to its West African neighbours, Nigeria has been beset by bad-governance and terrorism. A terrorist group called Boko Haram has terrorised the northern region of Nigeria for almost a decade killing an estimated 35,000 people and displacing over 2.5 million between 2011 and 2015 (CIA, 2021). These terrorist activities in many regions especially in the North of Nigeria, have crippled business and economic activities, causing increased risk premiums, and the loss of intellectual and physical talents (Adelaja & George, 2019). This points to the arguments made by Nguyen, (2020) and Hornuf et. al. (2018) that the environmental ecosystem consists of its unique factors and thus the human capital strength will be different across different ecosystems. Thus, it can be deduced that the Northern region would have significant amounts of low-quality human capital which could in turn impact on the type of EFM they obtain and the firm performance.

The current democratically elected government came into power in May 2015 and is led by President Muhammad Buhari (Nigerian Government, 2021). Barely one-year in power that country witnessed a decline of economic growth, slipping into a recession in 2016. Nigeria has been faulted for its over-reliance on oil as its government’s main source of revenue and foreign exchange earnings (CIA, 2021). The low oil prices and production has been linked to Nigeria entering a recession in addition to worsening militant attacks in the south-south region of the country.

The inflation rate rose from 8.06% in 2014 to 16.5% in 2017 (World Bank, 2021b). Comparing the inflation rate to other MINT economies, it can be seen that Mexico, Indonesia and Turkey had an inflation rate of 4.02%, 6.39% and 8.85% in 2014 respectively which were lower than Nigeria's with the exception of Turkey (World Bank, 2021b). Some neighbouring countries also had a lower inflation rate in 2014 than Nigeria for example, Niger had a deflation of -0.93% and still had a negative inflation in 2019 of -2.49%. On the other hand, Ghana had a higher inflation rate in 2014 of 15.49% but has now seen that significantly reduce in 2019 to 7.18% in 2019 4.22 points lower than Nigeria's 2019 inflation rate (World Bank, 2021b). Figure 2.4 highlights the inflation rate of some countries compared to Nigeria.

**Figure 2.4: Nigeria's Inflation Rate Data (annual %)**

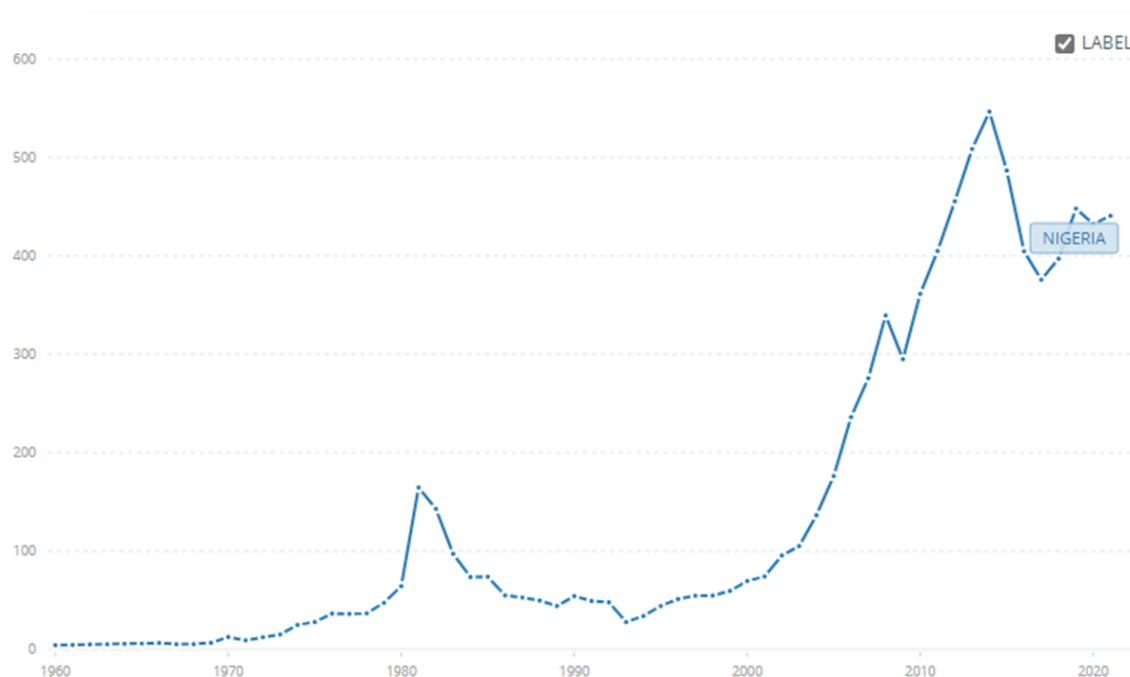


Source: World Bank (2021b)

Experts argued that the soaring inflation rates in Nigeria in 2017 was exacerbated by the recession. This slowed economic activities causing scarcity of products around the market. Nigeria's GDP consistently dropped from USD546.7 billion to USD375.7

billion in 2017 (See figure 2.5). Within the same period, Indonesia grew its GDP from USD890.8 billion to USD1 trillion (World Bank, 2021b).

**Figure 2.5: Nigeria's GDP Rate (current US\$)**



Source: World Bank (2021b)

The Nigerian government amongst other analysts believe it is paramount to diversify the economy and encourage other sectors of the economy to contribute to the wealth of the nation (World, 2019). SMEs have been labelled as the tool to achieve government's drive. SMEs and entrepreneurial activities can foster economic development (Kelly et. al. 2012) and help the economy rebuild from the ruins of the recession.

Achugbu (2017) suggests that the entrepreneurial environment has not been given significant attention by research experts which has led to a poor understanding of the performance and integral factors of entrepreneurship. Anyadike et. al. (2012) highlights that Nigeria was one of the poorest countries in the world, and in a more

recent evaluation the World Bank (2019) ranked Nigeria as the poverty capital of the world.

Canter et. al. (2020) explains that the environmental ecosystem upholds the framework within which activities of entrepreneurs in certain sectors or regions are captured. Canter et al (2020) and Auerswald & Dani (2017) express that the entrepreneurial ecosystem exists as a subset of the larger economic system of a region. Canter et. al. (2020) puts this into perspective by illustrating how the creation of a new venture could lead to an increase in employment thus giving grounds to the idea of labour mobility within such a region's economic system. Looking at the macroeconomic complexities of the economy and the financial market, the performance and outcome of BG SMEs can be affected by the innovation in the market and, the liquidity of the financial market (Tuan, et al., 2016). Thus, differences in factors across countries can affect, for example, the exit of time or secondary buy-out of firms (Espenlaud, et al., 2015).

The nature of labour mobility within the Nigerian environmental context can be analysed within the human capital theory and how entrepreneurial financiers view entrepreneurs and their ability to manage resources. Roundy (2016) comprehends that the views and perspectives within an ecosystem can impact on the way knowledge is transferred around entrepreneurs and other stakeholders within the system.

This research believes that the environment context of the research is an important element in determining the application and results of EFMs on BG SMEs. It is challenging to assume that the impact of EFMs BG SMEs will be the same in Nigeria as is in other countries (Kato & Tsoka, 2020). The various factors discussed above (labour mobility, innovation in the market, liquidity of the financial market, etc.), are



factors that could affect the decision of EFMs to provide funding to BG SMEs in Nigeria, and factors that could influence the need and knowledge of the different types of EFM. The environmental context and the various environmental ecosystem factors have not been directly measured in this research but have been acknowledged to have possibly played a role in the outcome and performance indicators measured.

The agency theory and the human capital theory have been used to develop the research framework (figure 2.2) conducted within this core environmental ecosystem of Nigeria. The research views the agency theory in the relationship between EFM and the management and board of the BG SMEs, whilst including the human capital theory by relating the capacity of the management team through the management experience of the BG SME with the EFMs they have obtained. The following RQ is developed:

RQ1: Does the type of EFM obtained impact differently on the profitability, firm structure and SROI performance of BG SMEs?

RQ2: What is the moderating influence of management experience on the relationship between EFM and BG SMEs' profitability, firm structure and SROI?

RQ3: What is the moderating influence of firm size on the relationship between EFM and BG SMEs' profitability, firm structure and SROI?

## **2.7 Conclusion**

Chapter 2 discusses the key research theories and research framework. The agency theory and human capital theory were adopted in this research to highlight the role the relationship between the agent and principal play and the importance of human capital in defining the impact of EFMs on the performance and outcome of BG SMEs.

This chapter further deliberates and justifies the environmental context of Nigeria and the relevance.

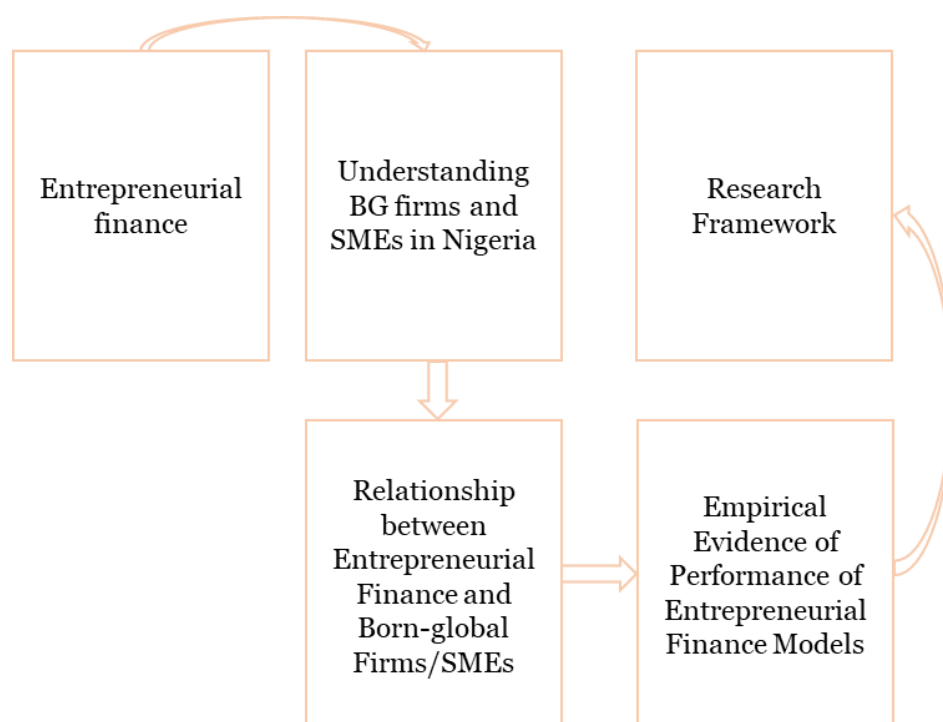
### 3.1 Introduction

Empirical literature works have revealed that innovative start-ups, BG SMEs and SMEs as a whole contribute largely to the creation of jobs and economic growth in societies around the world (World Bank, 2019a, Takalo & Toivanen, 2012). According to the World Bank, these firms are the economic backbone of most economies in the world with SMEs making up more than 95% of the registered enterprises globally (World Bank, 2017). To maintain sustainable operations and achieve growth, these types of firms anywhere in the world require access to entrepreneurial finance (Achubugu, 2017).

This chapter is divided into five (5) broad categories (see figure 3.1) and will examine literature on before and after investments in EFMs. It starts by providing an overview of the concept of entrepreneurial finance and a discussion of the different types of EFMs identified in the literature. This is followed by a review of BG SMEs and SMEs, a review of the relationship between EFMs and BG SMEs in Nigeria whilst highlighting the empirical evidence of the impact of EFM on firms from previous literature papers and a development of the research framework.

The research framework was developed and elaborated in this chapter, taking into account three performance measures for BG SMEs and the different variables. The research framework was sub-divided into individual models and the hypotheses were proposed for testing within the environmental context of Nigeria.

**Figure 3.1: Graphic Illustration – Five Broad Categories of Chapter 3**



*Source: Created by the Researcher*

### **3.2 Entrepreneurial Finance**

Entrepreneurial finance has gained attention from academics in recent times with Cumming & Johan (2017) describing a move from the traditional financing models of funding received through publicly traded companies to a focus on innovative financing of non-listed firms and SMEs. Entrepreneurial finance has been described by Cumming et al. (2019) as a distinctive part of corporate finance that pays particular attention to investments, investors and investee portfolios. The distinction was highlighted by explaining that entrepreneurial finance includes the evaluation of finance and accounting management activities in young and privately-owned firms while corporate finance focused on firms that were well established and listed.

Several funding options exist around the world to provide finance in debt or equity (Biancone & Radwan, 2018) or grants/philanthropic donations (Onishi, 2015), for

ventures. Some of these funding options are aimed at improving the firms' access to funding, promoting business innovations, increasing the wealth of shareholders & investors, and profitability of businesses.

Many firms today have had to start their business operations with their own equity and/or obtain support from their family and friends. These funding options are referred to as internal and informal sources of finance (Pedchenko, et al., 2018; Khan, 2015). Some authors, for example, Hanlon & Saunders (2007) note that family and friends as a source of finance provides additional value to firms beyond finance. Hanlon & Saunders, (2007) explain that the family and friends funding model contributes by providing valuable advice to the business owners, at a cost relatively less than such service could have been obtained externally. They add that the family can also be a source of affordable labour.

Conversely, some other professionals and academics believe that the family and friends funding model is an unsuitable financing source and can lead to a significant reduction in the chances of survival of businesses (Aldrich & Martinez, 2007). Riding (2008) concludes by stating that family and friends are unlikely to have the required networks and knowledge to boost company growth like external finance.

Investments in any firm in any location bears a level of risk irrespective of the firm's size or business cycle as they are susceptible to various external factors (e.g., political, legal, economic development, etc.) in the regions they operate (OIEA, 2019). To reduce the risk of investing, various innovative funding models have been created. Some of these funds exist as bank loans, IVC, BAs, government grants, family funds, etc. In recent times, these innovative funding options became known as *entrepreneurial finance models* (Block et al. 2018; Block et al. 2016; Smith, 2012; Acs & Virgill, 2010),

while earlier financing options such as family and friends' equity and loans, corporate loans (Smith, 2012), and stock market trading (Cumming & Johan, 2017), are referred to as *traditional finance models*. These traditional finance models are not categorised as EFMs. Before the development of innovative external funding options, the financing market was dominated by owners' savings, funding from family & friends, bank loans, and corporate loans (Fogel, 2001), new funding options have been created to bridge the funding gap and cater for the dynamic nature of new business structures (Block et al., 2018).

Cumming & Johan explain that entrepreneurial finance is a combination of entrepreneurship and finance. According to Rogers (2014) entrepreneurial finance comprises the process of financial management which includes bookkeeping, accounts management, cash flow management, and finance capital arranging in debt and/or equity. Entrepreneurial finance embodies the management and capital structure of innovative businesses, whilst considering the firms' technological usage, management structure, business cycle, contract terms, equity, and debt holding, and business sector.

The entrepreneurial finance sphere in recent years has changed (Block et al. 2018), with innovative firms redefining the way businesses are financed, business goals & approaches, productivity, and technology (Block, et al., 2016). New entrepreneurial finance players have emerged to match the new operational structures of firms (Block et al. 2018; Cumming & Groh, 2018; Smith, 2012). In the view of Block et al. (2018) these new EFMs emerged as a result of the challenges encountered by entrepreneurs and start-ups in accessing finance particularly from the period of the financial crisis of 2008/2009. There has been an emergence of entrepreneurial finance models such as crowdfunding (Block et al. 2018) accelerators (Block et al. 2018), private

grants/foundations (Kochuyt, 2009), philanthropic venture capital (PhVC) (Scarlata et al. 2017; Onishi, 2015), family offices (Block et al. 2018), government venture capital (GVC), intellectual property (IP) based funds, IP-backed debt funds, social venture capital (Block et al., 2018), initial coin offer (ICO) and private equity funds (Dutta & Folta, 2016; Fraser et al. 2015; Mills, 2011). The Igbo apprenticeship financing is a system of funding that has been widely used in the South-East of Nigeria for many years (Neuwirth, 2018), but has only recently gained more attention from academics and professionals.

Other funds which are not new but are captured under entrepreneurial finance and have been affected by the innovative business models of entrepreneurs include, independent venture capital (IVC) (Buchner et al. 2018; Groh & Wallmeroth, 2016; Luukkonen et al. 2013; Croce et al., 2013), business angels (BAs) (Block et al. 2018; Kerr et al. 2014; Fairchild, 2011), government grants (Hughes, 1997), banks (Rogers, 2014), and initial public offerings (IPOs) (Chang, 2004). These models have been described as traditional finance models. Denis (2004) highlights that traditional finance models typically request from firms, collateral in exchange for funds. They also demand to see a strong/healthy cash flow statement to determine if the firm has the capacity or potential to pay back its debts or generate a return on investment. The nature and application of traditional finance models can be seen to be distinct from EFMs (see table 3.1).

### **3.2.1 Nature and Application of Entrepreneurial Finance Models**

There are several debates that have been raised regarding SMEs and BG SMEs' financing options and the difficulties with such firms obtaining external finance. Access to finance for SMEs and BG SMEs presents a huge constraint or opportunity to achieving their set goals and posing a threat to or opportunity for their survival (Brown

& Earle, 2015; Cosh et al. 2009), and restricts their creative innovations (Goujard & Guérin, 2018; Angilella & Mazzù, 2015). There are some difficulties that have been identified with SMEs and BG SMEs their process, ability to access finance and their performance in the entrepreneurial finance market. Some of these challenges include information asymmetry, individual and collective capital (Takalo & Toivanen, 2012), cognitive bias (Matthew & Manuel, 2017), and lack of trackable performance records (Nguyen & Canh, 2021). Lack of or inadequate international cash flows, collaterals, and agency problems also present hurdles to obtaining finance (Block et al. 2018).

An extensive review of the available literature shows that there are several options available to firms to source funding as seen from the list of EFMs identified above. It can also be deduced that the mechanisms of the EFMs differ in structure and application. Some key mechanisms this research highlights include provision of finance, type of finance (debt, equity, or grant), contract type, performance measurement, provision of additional value, for example, access to a new market, technology, networks, management expertise, etc.

Block et al. (2018) agree that some EFMs provide more than just finance and financial value. Some EFMs have been noted to create additional value by helping to improve firms' technology, market network, and coordinating firms' management structure. These EFMs are heterogeneous and offer a mix of debts and equity (Block et al. 2018). Brown & Earle (2017) add that some EFMs have changed their performance measurement metrics and not only focus on financial returns, but also on social returns which are now widely known as social return on investment (SROI). This imperatively indicates that the measure of performance could be different for the different EFMs in response to their structures and goals. For example, Government Venture Capital (GVC) which is a government financing that adapts several venture



capital elements focuses on *governmental* and *financial* return on investment (ROI). The governmental ROI is linked to the set objectives of the government providing finance. These objectives could include, job creation, social service provision, production growth, projects that support political manifestoes, etc.

Since this research is investigating the performance and outcome of BG SMEs, and EFMs structured to be able to deliver more than just finance, it would be relevant to understand the value add-ons of these EFMs before looking into the different performance and outcome measurements.

#### **3.2.1.1 Firm Structure and Value Addition of Entrepreneurial Finance Models**

The possible value addition provided by EFMs is an important aspect of this research. Objective 3 of this research is geared to critically evaluate the impact of EFMs on the structure of BG SMEs. Thus, assessing if EFMs have any value addition on the management and board compositions of investee BG SMEs.

EFMs referred to above have different fundamental goals, as in the case of social venture capital fund that focuses on social goals, government grants and government venture capital on political goals, corporate venture capital on technological growth strategy, and crowdfunding on product development and community-building goals (Block et al. 2018). So also, are some EFMs willing to provide more than just finance to their investee firms, going further to provide additional value to improve the performance and quality of the firms they invest in. There is literature that supports that IVCs (Cumming & Knill, 2012), private equity (Abereijo & Fayomi, 2015), PhVC (Scarlata et al. 2017), GVC (Luukkonen et al., 2013), CVC (Cumming, & Vismara, 2018), accelerators (Drover et al., 2017), private/foundation grants (Kochuyt, 2009),

and the Igbo apprenticeship model (Neuwirth, 2018), aim to provide value to firms alongside making finance available to them.

There is further evidence to show that some EFMs provide to portfolio firms some value addition besides finance. It has been articulated that IVCs attach exceptional managerial guidance (Ugbaja, 2019; Block et al., 2018; Cummings & Knill, 2012), monitoring and guidance of operations (Hirsch & Walz, 2013; Cumming, 2008), technology and technical resources (Cumming & Vismara, 2018), network and market expansion. de Bettignies & Brander (2007) describe it as managerial guidance, which is believed to reduce the risks of information asymmetry and mismanagement of investors' capital. Abereijo & Fayomi (2005) notes that this management guidance value addition provided by IVC firms is like that of private equity firms, who are also keen to see their injected capital being managed by a trusted team they form.

Reviewing managerial competence is noted as a critical requirement for some EFMs. IVCs and private equity firms ensure that the management team of the investee firms are competent to manage the resources of the firm. In cases where they have been unsatisfied, they have provided additional value by providing competent managers, including training and monitoring systems. Similarly, BA investors consider the management team as relevant and have been known to review the firm structure and provide value addition through improving the quality of the management team. The quality of the management team can be a possible deal decider for BAs who can either accept to fund a firm or reject investment opportunities (Mason et al., 2017). Research has shown that BAs have the capacity to offer value-added services alongside providing finance. In their research Hoyos et al. (2017) investigate the reason why some BAs provide high-value add-ons and why others provide just funding and no additional value. BAs are a source of valuable knowledge which is transferred to the investee

through business expertise, knowledge, and experience of the industry and networking (Hoyos et al., 2017).

Paul et al. (2007) indicate that BAs participate in investee companies by playing both strategic and operational roles within the companies. BAs have been seen to be co-owners (Block et al., 2018), or have taken up management positions (Mason et al., 2017), or have also presented themselves as consultants and business advisers on different deals. These have also been some ways they have adopted to manage agency risks and transfer valuable knowledge to their investee businesses. Harrison et al. (2010) find that as part of BAs' strategy of control and monitoring, they tend to invest in businesses that are within a geographical location of easy reach, thus a company within proximity. Bessière, et al. (2020) assumes that the level of contract and monitoring of the BAs on their investee companies is more dependent on the ease of contact than on the need of that contact.

Similarly, accelerators are operational platforms that provide support to start-ups by offering mentorship, network access, funding, and various shared resources to make it easy for such firms to stand on their feet whilst on their way to achieving business growth (Shenkoya, 2021; Hallen, et al., 2016). Accelerators play a key role, adding value to start-up firms by bridging the knowledge gap, connecting firms to experiential learning and growth opportunities (Lamine, et al., 2018). Their value system and business models make them unique (Dempwolf, et al., 2014). This EFM has become more popular in recent years, with Shane (2016) noting the increase of 1 accelerator firm in 2005 to over 500 in 2015. It can be interpreted that the mentorship they provide can improve the management capacity, whilst the network access to improve the market share and thus sales of firms.

The table below highlights the different entrepreneurial finance models and their value add-ons to a firm portfolio and their features. Table 3.1 points out that each EFM has its unique components that could place specific importance on what it measures as performance.

**Table 3.1: Features Entrepreneurial Finance Models**

S/N	Entrepreneurial Finance Model	Funding Option	ROI	Added-value (Non-financial)	Investment Target
1	Independent/traditional venture capital (IVC)	Debt and Equity	Financial		Later stage start-up
2	Business angel (BA)	Equity	Financial	Mgt support & network access	Early stage start-up
3	Bank loans	Debt and Equity	Financial		Later stage firms/collateral
4	Crowdfunding				
5	Debt-based	Debt	Financial		Early stage start-up or project
6	Donation-based		Social		Social venture or project
7	Reward-based		Product-related		Early stage start-up or project
8	Equity	Equity	Financial		Early stage start-up or project
9	Accelerators	Debt & Equity	Financial, strategic, and political		Early stage start-up
10	Philanthropic venture capital (PhVC)	Equity	Social		Early stage start-up
11	Government venture capital (GVC)	Debt or Equity	Governmental and financial		Early and later stage start-up
12	Corporate venture capital (CVC)	Equity	Financial, technological and strategic		Early and later stage start-up
13	Initial coin offer (ICO)	Equity	Financial		Early stage start-up
14	Private equity (PE)	Equity	Financial		Early and later stage start-up
15	Intellectual property (IP) based funds		Financial		Patents
16	Intellectual property (IP) backed debt funds	Debt	Financial		IP based start-ups & established mid-size firms
17	Project financing	Debt or Equity	Financial		All stages
18	Apprenticeship model	Grant	Social	Training	Start-up
19	Public Grant	Grant	Social	Training, network access, & marketing	Early and later stage start-up

Source: Adapted from Block et al. (2018)

### **3.2.1.2 Performance and Outcome Measurement Metrics**

The performance measurement metrics indicate how the different EFMs measure the performance of an investee firm. Literature notes that firms' performance was primarily measured by their financial and profit performances (Agrawal et al., 2019). Business models around the world have transformed innovatively (Block et al., 2018), with businesses aimed at adding significant value beyond simply measuring profit and financial returns (Rotheroe & Richards, 2007). Transformed business models have reevaluated their performance measurement metrics, looking beyond the numbers and incorporating measurement of the environmental and social benefits and returns (Kwizela, et al., 2018). The potential and need to measure the social investments firms make has been described as SROI (Kwizela et al., 2018; Nicholls, 2009; Rotheroe, 2007). The concept of SROI reflects various aspects of change which could be expressed both quantitatively and qualitatively (Leck, et al., 2016). Harlock & Metcalf (2016) state that SROI seeks to provide a valuation for social, economic, technological, and environmental outcomes, in monetary terms.

Non-financial goals have become increasingly more important than financial goals as is evident in the development of new valuation models to determine the SROI (Block et al. 2018). For example, PhVC has emerged as a funding model of entrepreneurial finance (Scarlata et al. 2017), with some features of the traditional venture capital funds but different. PhVC provides finance for firms as well as value-added services, but in addition to expecting financial returns, they expect their portfolio firms to provide SROI (Scarlata et al. 2017). Another fund that has emerged with similarity to the traditional venture capital is the GVC. The GVC looks to gain both financial and non-financial returns. The GVC funds are predominately funds made available by governments and regional authorities of nations, and it is believed that with increased

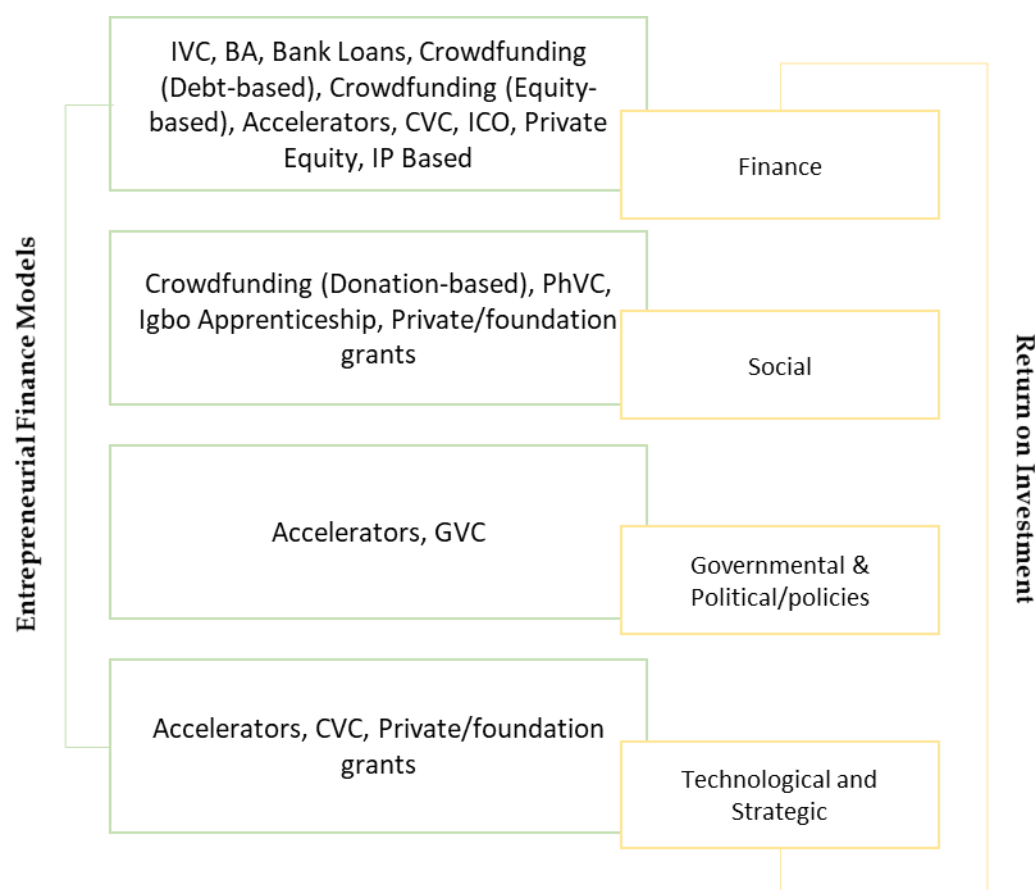
access to entrepreneurial finance, there would be significant growth in innovative firms and implementation of creative initiatives (Munari & Toschi, 2015). Overall, governments see the provision of capital to firms through the GVC funding initiative as a pertinent policy drive to foster not only the growth of private firms but also their countries' economic development process (Munari & Toschi, 2015).

There are still finance models that focus on finance only, but it is relevant to understand the nature of the different EFMs. The performance measurement metrics cover two key aspects of this research – the measurement of profitability and the measurement of SROI of BG SMEs.

A new innovative finance model called the social venture capital (SVC) fund provides capital funding to firms in anticipation of not just finance but SROI. A social venture capital fund is a type of entrepreneurial finance model that provides equity and debt finance to firms that not only would ensure a return on investment but will also achieve social impact goals or SROI (Block et al. 2018). SVC adopts a similar investment method like the traditional venture capital, as they apply strict selection measures, provide additional support to their investee firms, and pursue a high-monitoring approach (Ingstad, et al., 2014). SVC tend to include in their practice coaching, oversight on advisory board and other management and reporting systems (Hehenberger, et al., 2014). Social venture capital fund differs from the traditional venture capitals because it focuses on both financial return on investment as well as social returns whilst the traditional venture capitals focus only on the financial returns (Block et Al. 2018).

Figure 3.2 highlights the return on investment (ROI) for the EFMs. The figure shows that in addition to financial and social returns, some EFMs do expect *governmental & political returns* and *technological and strategic returns*.

**Figure 3.2: EFMs and the expected ROIs**



Source/Adapted: (Block, et al., 2018; Neuwirth, 2018)

GVC financing and government grants are EFMs that enable the government to bridge the funding gap for firms (Munari & Toschi, 2015), whilst also empowering firms to be able to create jobs, increase tax revenues and foster economic growth (European Commission, 2005). The output for these types of EFMs is focused on how the firms' operations benefit the government and their policies. This ROI differs from EFMs that rate firms on their ability to generate financial returns in relation to the capital input made. The question in such cases for GVC and government grants is around the true



value of the finance on the firms that obtain them. Many argue that the GVC and government grants are interested in providing funding to as many firms as they can, which inherently has the funds provided being significantly less than what can be obtained from other EFMs (Srhoj, et al., 2020). GVC typed funds have been accused of fostering short-termist funding environments whilst helping to create new firms but failing to help them remain sustainable (Hall, et al., 2012). There are indications that a critical appraisal of this funding model has become important as the social elements that applies around government are different from the market (Munoz, 2017).

Another ROI for EFMs is the *technological and strategic returns* (Block et al. 2018), which tends to anticipate a new innovative technology or strategic products as the outcome of investments made. These are popular ROIs for CVCs, accelerator funds, and private/foundation grants. The idea of CVC is to support the growth of high innovative start-ups or SMEs through large corporate funds. For CVC investee firms, Chemmanur & Fulgherie (2014) describe them as subsidiaries of corporate ventures structured to offer more long-term investments than the IVC funds. CVC funds also are interested in the financial performance of their investee firms and the social benefits and returns their investments generate.

This research is focused on the performance measurement metrics of BG SMEs' financial returns and SROI. The financial returns are hinged around three profitability indicators – ROE, ROA and market share. While the outcome of the firm is assessed by the impact the EFM has had on the firm structure which is measured by the management and board compositions pre and post periods of obtaining an EFM.

### **3.2.2 Nature and Application Entrepreneurial Finance Models in Nigeria**

BG SMEs in Nigeria face constraints in accessing external finance just like BG SMEs in other countries around the world (Achugbu, 2017). There are indications that firms in Nigeria have several options for financing their activities, though these options could be described as limited compared to more developed countries. This research reviews literature on EFM in Nigeria and how different EFMs have been used in this West African nation.

#### **3.2.2.1 EFMs in Nigeria**

Reports published by Partech and TechPoint who are leaders in digital global investment platforms in Africa reveal that Nigeria is attracting reasonable capital from more than a few sources in different fund (see table 3.2). One of such innovative EFM financing businesses in Nigeria is crowdfunding. Crowdfunding has been used to finance several businesses in Nigeria, however, the structure remains underdeveloped. Unlike some other countries, for example, the UK, Nigeria does not have a regulatory framework guiding the operations of crowdfunding. Vulkan et al. (2016) point that the UK has had regulators existing for equity crowdfunding since 2011. In the US, the Jobs Act was instituted in 2013 to enable crowdfunding platforms to operate (Kshetri, 2015). There are over 450 crowdfunding platforms globally (Adekoya, 2019), including some of the largest and most popular platforms, for example, Kickstarter (Kshetri, 2015), with only 9 platforms in Nigeria (Aderemi, et al., 2021). Using crowdfunding platforms like Kickstarter has been reported to be more successful than businesses trying to raise funds through their websites.

**Table 3.2: Top Funding Deals in 2020 (\$1 Million and above)**

Company	Sector	Fund Provider	Type of Funding	Amount (\$ ooo)
OPay	Financial Services	Meituan-Dianping, DragonBall Capital, Gaorong Capital, Source Code Capital, SoftBank Ventures Asia, Bertelsmann Asia Investments (BAI), Redpoint Ventures China, IDG Capital, Sequoia Capital China and GSR Ventures	Series B	120,000
Andela	Services	TLcom Capitals, Spark Capital, Social Impact Capital, Sales Force Ventures, Produential Financial, Mark Ventures, Highline Beta, Generation Investment Management, GV, DBL Investors, Chan Zuckerberg Initiative, GV, CRE Venture Capital	Series D	100,000
OPay	Financial Services	Sequoia China, IDG Capital, Source Code Capital and Opera	Series A	50,000
Kobo360	Mobility & Logistics	Goldman Sachs, Asia Africa Investment and Consulting Pte, TLcom Capital, Y Combinator, the International Finance Corporation	Series A	20,000
Rensource Energy	Energy	CRE Venture Capital, Omidyar Network	Series A	20,000
Arnergy	Energy	Breakthrough Energy Ventures, All On Energy, ElectriFI, Norfund	Series A	9,000
Metro Africa Xpress	Mobility & Logistics	Zrosk Investment Management, Yamaha Motor Co, Novastar Ventures, Breakthrough Energy Ventures, Alitheia Capital	Series A	7,000
Gokada	Mobility & Logistics	Rise Capital, Adventure Capital, First MidWest Group, IC Global Partners	Series A	5,300
OneFi	Financial Services	Lendable	Debt Financing	5,000
Kudi	Financial Services	Partech Africa	Series A	5,000

Source: TechPoint (2020)

Adekoya (2019) and Hersan (2015) argue that crowdfunding is not yet a popular source of entrepreneurial finance in Nigeria. Adekoya (2019) adds that this is a result of the knowledge gap in crowdfunding and entrepreneurial finance sources available

to SMEs in Nigeria. Other issues could include the nonexistence of a database/databank for crowdfunding in Nigeria (Soreh, 2017). Soreh (2017) highlighted that in Nigeria, the most common way of crowdfunding has been through television and social media platforms. These crowdfunding campaigns have been used principally to raise funding for the sick or medical emergencies. These funds are raised from the crowd directly requiring backers to provide financial support to a published bank account detail (Soreh, 2017). In a report by Techpoint (2020) USD 7 million has been raised between 2018 and 2020 through crowd funding in Nigeria. In a survey conducted by Soreh (2017) on the awareness of crowdfunding in Nigeria, they find that Nigerians are more inclined to make crowdfunding donations to social causes rather than providing finance to an entrepreneur or a project innovation. Aderemi, et al. (2021) list lack of regulation, fraud and corruption and lack of adequate awareness as some of the challenges crowdfunding faces in Nigeria.

There is a huge opportunity for firms/SMEs to bridge the funding gap with crowdfunding and with the other funding options available. Of course, there are key questions to ask about the impact of crowdfunding on the performance or outcome of a firm. Eniola & Entebang (2015) note that Nigeria is one of the top 10 internet users in the world while topping the list in Africa. Despite the huge access to the internet in the country, there seems to be scepticism in engaging in online transactions. Widuto (2014) points that there are inherent risks about the internet that are likely affecting the acceptance of crowdfunding in Nigeria. There are risks of cyber-attack, internet fraud (Wasiuzzaman, et al., 2022), and sustainability of funding platforms, and mis-selling (Widuto, 2014).

Buttice et al. (2017) state that crowdfunding involves the backing of a large group of people with supporting members continuously supporting the business owners even

after the crowdfunding campaign has been completed. Skirneusky et al. (2017) related that not all backers are invested in frequent interactions with the business owners, and most are more interested in receiving their reward and might be content with receiving just tailored updates. Thurridl & Kamaleitner (2016) and Colombo et al. (2015) identify active backers as an important group within reward-based crowdfunding. They find that active backers play valuable roles in helping businesses improve product design and quality by providing feedback and comments. Colombo et al (2015) referred to this as social capital and can be seen as a value-added service of crowdfunding.

Croce et al. (2016) and Carpenter & Suret (2015) believe that the investment activities of BAs have gone largely undocumented. This can also be said to be the case in Nigeria with a high number of investments and activities being poorly documented and the majority not documented at all. They add, however, that it is beginning to change with more BAs being willing to join formal groups. Thereby allowing for improved documentation of their activities (Mason et al, 2017). There are records of investments made by BAs, IVCs, CVCs, ICOs, and others in firms in Nigeria (TechPoint, 2020).

Accelerator EFM has been used in Nigeria on different platforms to raise finance for start-ups and BG SMEs. They play a significant role in the sustainable development of firms in the region (Akanle & Abraham, 2017). The working model of accelerators in addition to linking firms to experiential knowledge is to fundamentally create a conducive ecosystem for these firms to thrive (Goswami, et al., 2018). The accelerators exist as functional hubs in Nigeria to create that ecosystem that can spur growth for BG SMEs. Most accelerator hubs are privately owned, however, the government plays some role in creating accelerator hubs. For example, the Enspire incubator is an accelerator hub that was established by the government. Private sector hubs include

Co-creation Hub, iDEA, Wennovation Hub, Passion incubator (Shenkoya, 2021), Adanian Lab, amongst others.

The accelerator/incubator form as it is known today is said to have successfully existed in an elaborate form in the South-east of Nigeria. This financing scheme is known as the 'Igbo apprenticeship' (Kanu, 2019), or the 'Igbo incubator' (Neuwirth, 2018), or the 'nwaboi apprenticeship system' (Henry & Lloyd, 2019). The Igbo apprenticeship system (IPS) has been described as the largest mentorship and incubator scheme existing in the world today (Neuwirth, 2018). The IPS has played a major role in job creation and local economic development. Ugbaja (2019) describes IPS as a cultural platform that provides mentorship and training to a person known as the apprentice, for a stipulated period. The apprentice undergoes a formation, developing strategic skills required to run a successful business. At the end of the stipulated period of mentorship, the mentor provides finance, termed as *settlement* to the apprentice, enough to set up a business where the apprentice now becomes the *boss* (Ugbaja, 2019). There is an unwritten expectation that this apprentice now turned boss will take up apprentice of their own to train. This cycle continues, creating jobs and wealth amongst the people.

Grants have been a major source of financing in Nigeria alongside bank financing. These grants have been majorly from the government, with several grant schemes created over the years. However, the grant financing space is no longer government-controlled but has been largely supported by the private sector. The private sector has taken up the challenge and is providing grant finance to firms in Nigeria. An example of a major private sector grant provider is the Tony Elumelu Foundation (TEF) (Techpoint, 2019). TEF made available USD100 million to be disbursed to innovative SMEs over a 10-year period (TEF, 2022).

The government has played and continues to play a remarkable role in the provision of grants (Babajide, 2021; Peter et al., 2018). Acknowledging the tremendous contributions of SMEs in economic development, several schemes and institutional reforms have occurred in Nigeria to bridge financing gaps through grants. For example, The *Small and Medium Enterprise Development Agency Nigeria* ("SMEDAN") a government institution was established in 2003 to support, manage, stimulate, monitor, and provide funding solutions to SMEs in Nigeria (Babajide, 2021; SMEDAN, 2003). Nigeria has also established other institutions and schemes to strategically drive the countries growth by empowering SMEs in Nigeria (Akingunola, 2011). The Nigerian government has made effort to provide grant funding to SMEs through the SMEDAN, the Bank of Industry ("BOI"), Bank of Agriculture ("BOA"), National Economic Reconstruction Fund ("NERFUND"), Nigerian Bank for Commerce and Industry ("NBCI"), Small and Medium Industries Equity Investment Scheme ("SMIEIS"), World Bank Loan Scheme (SME I & II), etc., without any requirements for SMEs to provide collateral or evidence of previous transaction/trading history (Babajide, 2021). Reports show that in addition to finance grants, SMEs have received specialized services, technical support, and long-term loans (smedan, 2013).

Through conscious policies, governments have also supported SMEs by standing as guarantors and providing loan guarantees (Mills, 2011). Nigeria adapted a loan guarantee scheme similar to one the UK government in 2009 established that covered loan guarantees whilst also providing new capital to SMEs. The Nigeria Incentive-Based Risk Management System for Agricultural Lending ("NIRSAL") was incorporated by the Central Bank of Nigeria ("CBN") to de-risk and incentivize the financing of agro-SMEs in Nigeria (NIRSAL, 2019). NIRSAL was established to help

cover SME borrowing thereby improving their chances of access to finance from other financial institutions and lenders.

The literature shows the limitations of the application of EFMs in Nigeria. The environmental ecosystem of Nigeria reflects that the application of EFMs and their interactions with BG SMEs differs. This essentially justifies the need for this research to understand the role these EFMs play specifically in the life cycle of BG SMEs in Nigeria. In doing this, it is pertinent to also understand the development and activities of BG SMEs in Nigeria.

#### **3.2.2.2 Overview of Government Intervention to Sustain SMEs in Nigeria**

SMEs are seen to be constrained by their inability to access funding, for example, bank loans, or venture capital financing. SMEs find it difficult to access bank loans and most SMEs cannot provide collateral security to access a bank loan (Ochinanwata, et al., 2021). Also, SMEs especially start-ups, do not have the required transaction history or cashflow history to approach entrepreneurial finance models such as venture capital. This can make it difficult to assess their creditworthiness (Ozoro 2019). SMEs are largely regarded as high-risk borrowers with little to no assets and sometimes business market experience (Adelekan et. al., 2019). These constraints hinder the growth and development of SMEs. Thus, also hindering their contribution to the growth and development of the Nigerian economy.

SMEs play an important role in the growth and development of economies, generating jobs and creating sustainable wealth for local communities. The SMEDAN/NBS 2018 report further highlighted that SMEs contributed 86.3% (over 59 million jobs) of the Nigerian Labour force. 7.64% of exports in Nigeria have been by MSMEs whilst generating 49.78% of the nation's GDP (Effiom & Edet, 2022). SME in Nigeria



provides goods and services and improves the standard of living (Ebitu, et al., 2016). With an understanding of this, the Nigerian government has over the years made various practical efforts to bridge the funding gap, thereby reducing the difficulty for SMEs in accessing external funding. The government has been the main driver and provider of entrepreneurial finance for BG SMEs, start-ups, and the SME sector in general.

One noted effort of the Nigerian government to bridge funding gaps is the creation of specialized institutions, for example, the SMEDAN, Bank of Industry (BOI), NIRSAL, and more. BOI is a development financial institution created by the government in 2001 to transform and foster the growth of industries in Nigeria by providing funding and technical business support services to enterprises in the country (BOI, 2001). BOI is owned by the Ministry of Finance Central Bank of Nigeria and private shareholders and has provided support to SMEs over the years by creating enabling policies and programmes whilst providing finance (Ozoro, 2019). That notwithstanding, it is widely believed that SMEs, still struggle to survive and achieve sustainable growth (Ozoro, 2019). Their research finds that the size of the loan provided by BOI has a significant impact on SME growth in Delta State, Nigeria showing that SMEs were able to scale up their operations, take on longer orders by being able to access larger loans from financial intermediaries such as BOI. Ozoro (2019) concludes that the BOI plays an important role in financing SMEs in Nigeria, and the funding scheme contributes positively to the growth of SMEs. In addition, the research recommends an extension of the loan tenure provided to SMEs to ensure more efficient use of the loan and ease the repayment pressure SMEs currently face on short-term loans.

Effiom & Edet (2022) taking a longer view of government funding, find that funding provided by the government to SMEs in Nigeria has had no significant impact on the

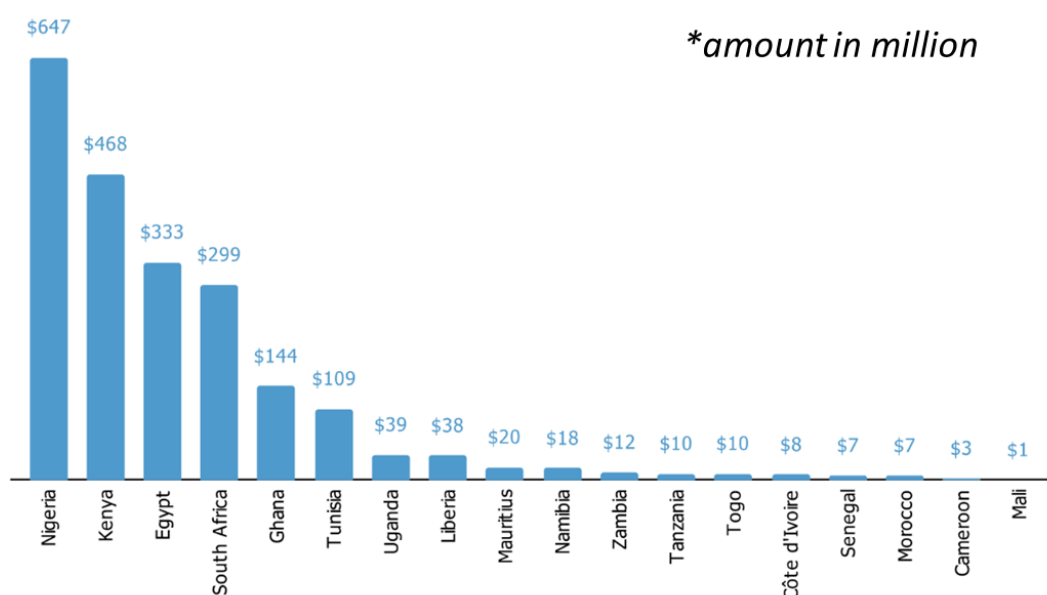
productivity of SMEs. Earlier research by Peter et al. (2018) differs as they find that government finance provided to SMEs in Nigeria did have a positive impact on the performance of SMEs. Awoyemi & Makangu (2020) find in their study that despite several government schemes initiated to bridge the finance gap for SMEs in Nigeria, not much has been achieved. They state that the schemes have been poorly managed by government administrations and lack of financial management by SMEs. In a different study, Ayemi-Agbaje & Oslo (2015) relate that there is a positive correlation between bank loans and the growth of SMEs/MSMEs in Ekiti state.

Some studies, for example Awoyemi & Makangu (2020) argue that in developing countries like Nigeria, the more SMEs/enterprises become financially free the more creditworthy they become. Awoyemi & Makangu (2020) note that for enterprises to have further access to entrepreneurial finance they need to grow. Earlier research by Kariuki (1995) argues that this is not always the case. Kariuki (1995) illustrates that the access to finance by SMEs in Kenya did not improve but rather declined after financial liberalization, a situation believed to have been caused by high-interest rates and associated costs of the transaction.

Several schemes have been created to bridge the financing gap and support SMEs to become self-sufficient. In 2013, the Micro Small and Medium Enterprises Development fund (MSMEDF) was created by the CBN to improve women's access to funding and promote gender equality. The aim was to increase this access by 15% every year, through conscious revision of policy frameworks, regulations, and supervision. The CBN made available N220bn, worked with DMB to reduce the collateral requirement from 75% to 50% of the loan amount. Some other interventions the government introduced include the YouWin, NIRSAL, NELFUND, BOI, SMEDAN, etc.

SMEs can access finance through debt and/or equity provisions (Awoyemi & Makangu, 2020). The traditional debt financing available to SMEs includes bank loans, overdraft, hire purchase, leasing, and trade credit. (Awoyemi & Makangu, 2020). Awoyemi & Makangu (2020) acknowledge some viewpoints from a financial theorist who state that debt financing is more suited for established firms that have started making profits with their rate of return being higher than the borrowed funds. With the difficulties in accessing bank loans or debt finances by SMEs, SMEs tend to favour internal sources of finance, for example, raising capital from family & friends, and personal savings (Watse, 2017). Their work goes further by stating that about 54.4% of the main sources of finance for SMEs comes from personal saving, with bank/borrowed fund making 22% of finance raised with 16.7% and 10% being obtained from families and cooperatives / ESUSU respectively. Notwithstanding, Techpoint (2020) and Partech (2019) show in their report the significant finance in raised from other innovative external sources. In a more recent report, Techpoint (2022) noted that Nigeria raised over \$600 million in the first half of 2022 which includes a single deal of \$250 million attributed to the popular Flutterwave (see figure 3.4).

**Figure 3. 3: Distribution of Funding in Africa for H1 2022 by Countries**



Source: Techpoint (2022)

### 3.3 Understanding Born-global Firms and SMEs in Nigeria

This research aligns with the notion of Knight (2015) and Mort et al. (2010) that BG SMEs are a group of SMEs that internationalize shortly after being established. Based on this, the references made about SMEs largely hold true for BG SMEs and have been treated as the same in this research.

Awoyemi & Makangu (2020) find that SMEs and BG SMEs in Nigeria have poor growth potential and find it difficult to become self-sufficient despite accounting for the majority of all business in the country (Gbandi & Amissah, 2014). Some observers believe that the challenges faced by BG SMEs and SMEs as a whole in Nigeria stem from their inability to access finance, lack of creativity and innovation, poor management amongst others (Nassar & Faloye, 2015). This research seeks to evaluate the financing opportunities available to BG SMEs and how the finance they obtained has helped them become more productive and avoid failing.

It is crucial to comprehend the dynamics of BG SMEs that pose a challenge to conventional knowledge of gradual, incremental business expansion (Cavusgil & Knight, 2015).

### **3.3.1 Born-global Firms**

Paul & Rosado-Serrano (2019) note that the term BG can be traced back to Rennie's 1993 publication in Mckinsey Quarterly where they stated that unlike the trending idea at the time which held that firms had to gradually internationalize. Rennie argued that some firms were established to engage in global business from the start. Thus, the term BG was formed by Rennie to describe firms that internationalize from the start (Paul & Rosado-Serrano, 2019). There has been growing academic interest in the internationalization of firms and BG SMEs (Dzikowski, 2018; Rialp-Criado et al., 2010; Rialp & Rialp, 2001; Werner, 2002).

The conventional idea of firms' internationalization was built on the Internationalization Process Model also known as the Uppsala Model (Wach, 2021; Pereira, 2015), which viewed firms' internationalization as a compartmentalized process of gaining early or accelerated entry into foreign markets through complex stages (Tarek, et al., 2019). The traditional business growth held that firms internationalized through a gradual process from their home countries to doing business internationally. Some firms that internationalized did so 7-20 years after being established (Oladimeji & Eze, 2017). The born-global model is a contemporary model that represents the swift internationalization of firms known as born-global firms, contrary to the Uppsala model (Pereira, 2015). BG SMEs have been categorised as high-performing SMEs with the capacity and drive to rapidly internationalize (Mort et al. 2010), with some firms being documented to have started exporting/internationalizing within 3 years (Oladimeji & Eze, 2017; Knight & Cavusgil,

2004). This research evaluates born-global SME, a subset and unique set of SMEs. The BG model has been facilitated by the growth of globalization, with the entire structure being supported by advancements in technology, transportation, and telecommunication (Paul & Rosado-Serrano, 2019). BG firms established and operated using internet facilities can be digitally piloted at averagely low costs whilst having a global reach from inception (Ezepue & Ochinanwata, 2017).

These firms were termed 'international new ventures' (Oviatt & McDougall, 1995; McDougall et al., 1994), 'born international small and medium enterprises' (Kundu & Katz, 2003), 'early internationalizing firms' (Rialp et al. 2005a), or 'born-global' firms (Madsen and Servais, 1997; Knight & Cavusgil, 1996). The term-global has become widely used with more researcher works centred around the subject area. Rialp-Criado et al. (2010) argues that though the differences in terminology might signify that there are differences in their defined application, but as Svensson (2006) pointed out, they all, however, encompass the idea of small new ventures that internationalize from the point of inception or in an accelerated short time. Knight & Cavusgil (2004) have stated that though some literature papers have used BG firms interchangeably with international new ventures, there is a clear distinction between the two. An international new venture can be seen as a new venture that internationalizes, thus, providing its services and/or products across the borders of its country of origin. International new ventures do not have a minimum return on their international operations. Distinctively, Knight & Cavusgil (2004) point out that, returns made by BG firms in their international operations should be 25% of the company's total returns. Also, BG firms export their products and/or services between 1-3years of starting operations, while international new ventures are not bound by that timeframe.

There have been several definitions of BG firms, and notwithstanding that over the last three decades such firms have become widely known. There does not seem to be a universally accepted definition or explanation of this unique group of firms (Xiong, 2021; Madsen, 2013; Knight & Cavusgil, 1996).

Early literature on born-global such as Knight & Cavusgil (1996), defined BG enterprises as firms that are usually technology-oriented and are small that venture into international markets from their inception. Rialp et al. (2005) reacted to definitions like that of Knight & Cavusgil, contending that such definitions of BG firms largely describing them as hi-tech start-ups are limited. Taylor & Jack (2013) believe that by expanding the view of born-global into other industries, there would be a better understanding of the key factors in the pace of firms' internationalization. The internet makes the pace of firm internationalization exceptionally rapid and instant (Ezepue & Ochinanwata, 2017). They list examples such as Facebook, Snapchat, Google and WhatsApp as BG firms that successfully internationalized from inception with the help of the internet.

Knight & Cavusgil (2004; 1996) in their work have defined BG firms as firms that engage in the exporting of their business services and products within the first three years of their business operations. They add that such firms should be receiving a minimum of 25 percent of their total sales income from their international market. Oladimeji & Eze (2017) define BG firms using the same factors as Knights & Cavusgil to measure firms. In their research that focuses on BG firms in Nigeria, they define BG firms as having internationalized within the first 4 years of being established and receive a minimum of 20% of their total sales from their international business operations. Despite Taylor & Jack (2013) observation, there is a valid concern that there might not be many BG firms existing in Nigeria, especially given Oviatt &

McDougall (1994) definition of BG firms. Oviatt & McDougall (1994) define BG firms as “business organizations that from inception, seek to derive significant competitive advantages from the use of resources and the sale of outputs in multiple countries”. This research applies a more liberal and more applied definition of BG (Mort et al. 2010), and describes *BG firms as business organizations that internationalize their business operations, either through exporting, repositioning or expanding their products or services beyond their country of establishment from the point of inception to 5 years of business operation while generating a minimum of 30% revenue from international sales.*

The research agrees with Knight & Cavusgil (1996; 2004) and Hashai (2011) that BG firms are more akin to firms that expand rapidly their geographical presence and/or international operations over time, rather than firms primarily established as globally dispersed. Knight & Cavusgil (2015) argue that firms that fit the BG definition are firms that either focus on rapid presence geographically or firms that favour exporting their products and services in foreign markets near their inception or both. With Knight and Cavusgil (1996; 2004) definition of born-global, we increase the possibility of finding more firms that meet the criteria as against Oviatt & McDougall (1994) definition. Coviello (2015) sums that Oviatt & McDougall’s definition of BG firms is broad, whilst the definition more recently provided by Cavusgil & Knight (2015) is narrower and more specific. It is therefore inaccurate to interchangeably use international new ventures and BG firms when describing internationalized firms (Coviello, 2015).

It has been argued that the term BG firms do not allow for a precise description of internationalized new ventures even though it is now widely promoted (Cavusgil & Knight, 2015; Coviello, 2015). Supporters of this argument explain that geographically, a firm might be operating in multiple countries but could be focused on only a



particular region and thus should not be described as global. For example, a firm that is established in Nigeria, and within the first 3-4 years begins to export its goods or services to Ghana, Cameroon, Niger, and Cote d'Ivoire only should not be seen as a global firm. Though such a firm is an internationalized firm, the firm focuses on only a particular region. Coviello (2015) identifies from Oviatt & McDougall's (1994) work that there are different forms of international new ventures, and from the example above, many internationalized firms are not truly global.

With the different definitions and ideas around BG firms that could and should be described, authors generally agree that the firms' internalizing path and its foreign origin are major factors.

Two popular theories have been used to describe the internationalization of firms over time (Pereira, 2015). They are the Uppsala model (U-model) and the born-global theory, both highlighting specific features of BG SMEs (see table 2.1 below). The U-model was developed by Johanson and Vahlne in 1977 and has become popular in understanding how firms progress their operations from their home country to other countries (Vahlne, 2020). The U-model explains a gradual process of moving across markets, following careful steps and decisions and this follows a careful acquisition of knowledge and capacity of both domestic and international markets (Tarek, et al., 2019). The gradual and incremental business expansion can help firms circumnavigate information asymmetry and poor human capital.

With the changing nature of businesses and the rapid nature, firms were internationalizing the born-global theory was created to explain the new nature of businesses in 1993 by Rennie (Adebayo, et al., 2019). The table below compares the differences in the idea of firm internationalization under the U-model and the concept

of BG SMEs that have evolved in their structure and operations. The BG model captures the position of this research on what a BG SME is and the underlying development of such firms.

**Table 3.3: Comparison of U-Model and Born-global Theory**

	<b>U-Model</b>	<b>Born-global Theory</b>
<b>Firm characteristics</b>	Old firms with mostly large size	Young firms with small size, a hybrid structure, and limited tangible assets
<b>Business strategy</b>	Not referred in the model	Offer innovative products, with high quality and performance that are cost-effective, to niche markets
<b>Approach to internationalization</b>	Reactive and opportunistic	Proactive and structured
<b>Speed of internalization</b>	Slow and incremental	Rapid internationalization
<b>Domestic market</b>	Strong domestic base before internationalization	Not important: small or non-existent
<b>Psychic distance</b>	Internationalize to close psychic distance countries	Psychic distance is not a constraint for internationalization
<b>Reasons to internationalize</b>	Domestic downturns and seek more solid market platform	Grow and exploit foreign markets opportunities to increase global market share and profits
<b>Market advantage</b>	Various years of operations	Strong knowledgebase and technology competence
<b>Vision of foreign market</b>	Foreign market is seen as involving risk and uncertainty: company keeps risk taking at a low level	Foreign markets are seen as an opportunity
<b>International knowledge and experience</b>	Expertise in internationalization can only be acquired with experience after the company' internalization and it involves many people	Entrepreneur is crucial in the internalization process: detains international experience and knowledge of foreign markets

<b>Market commitment decisions</b>	Gradual acquisition, integration and use of knowledge. Due to market uncertainty, market commitments are made in small steps.	Entrepreneur has experiential knowledge about foreign markets, so market commitments are taken faster
<b>Role of networks</b>	Networks are used in early stages and gradually replaced with firm's own resources	Networks are crucial for the firm expansion, rapid creation, and different markets exposure
<b>Special case</b>	Non-existent	Born-again global firms

Source: Pereira (2015)

The BG theory re-emphasizes that *BG SMEs are young, small-sized proactive firms, that rapidly internationalize within a short time of being established, to grow and tap into the opportunities that abound in foreign markets.*

### 3.3.2 Significance of Born-global Firms in Nigeria

Research shows that some firms in Nigeria were established with the core mission of exporting specific goods and services whilst others internationalized in their early stages of creation (Oladimeji & Eze, 2017). With the growth of technology in Nigeria, there has been an increase in tech-entrepreneurs and business owners who are ambitious and eager to explore and exploit the opportunities abound (Adebayo, et al., 2019).

Many countries are reliant on international trade to grow and sustain their economies (Nicita, et al., 2013). These trades could be through importing what the country requires and exporting excess or what it has a comparative advantage over. Countries create room and enabling environment for the private sector to actively participate in international trade. Nigeria over the years has been largely dependent on importation (Oladimeji & Eze, 2017), with its major export resource being crude oil (World Bank, 2015). Publications berate that Nigeria imports almost everything down to the by-products of its major export resources (Sohn, 2020; Oladimeji & Eze, 2017). Many

business owners and managers have the notion that the process of exporting is difficult and achievable by only established large firms. The Nigerian Export Promotion Council eludes that they have witnessed many firms exporting and venturing into foreign markets from an early stage in their business operations (NEPC, 2017). Their records show that many of the exporting firms are also MSMEs. According to Sohn (2020) 85% of the country's total export revenue is generated by oil with 48% percent of all exports going to only three countries: India, the US and China.

Oladimeji & Eze (2017) note in their research that some of the successes of BG SMEs in Nigeria can be attributed to the establishment and oversight functions of the export promoting agency – NEPC. Mohammed et al. (2017) goes further by highlighting that the firm's access to finance, adequate managerial experience, labour productivity and the firms age are significant determinants of their export propensity and intensity in Nigeria.

The growth of technology has advanced the concept of globalization. The world has witnessed revolutionary transformations in the application of technology this has impacted businesses and people in the way they communicate, commute, and operate their business. Culture, politics, regulation, financial institutions have also been impacted by globalization and technology. Distances around the world can now be covered with the help of the internet and ICT. Businesses can reach suppliers, financiers, partners, and customers anywhere in the world instantly (Ezepue & Ochinanwata, 2017), and with little or no intermediaries (Frynas & Mellahi, 2011). There has been a shift in Nigeria which has encouraged SMEs to take up operations and strategies that were exclusively believed to be possible only with larger firms and multinational corporations (Adebayo, et al., 2019).

There are still noted difficulties BG SMEs face in Nigeria and other emerging economies. Research conducted by Mpunga (2016) explores export performance for SMEs in Tanzania, it was found that domestic regulations and business laws, and export destinations had significant correlations with SMEs export performance in the region. Taylor et al. (2021) identifies cultural distance as a factor could hinder businesses internationalization that create services that are deemed inseparable. In such cases there are stricter considerations as to where to expand to as they rely on similarities in culture to be able to transfer products and services and capacity (Stoian, et al., 2018). This will likely encourage firms to seek similar culture destinations first before attempting more culturally diverse market. This tends to promote Africa-to-Africa internationalization (Adeleye & Boso, 2016).

BG SMEs as a distinct category of SMEs are significant to the overall economic outlook of Nigeria and her institutions. That being said, there are key determinants the make BG SMEs functional entities.

### **3.3.3 Determinants of Born-global Firms**

In the past, the internationalization process was driven by large firms (Hitt, et al., 2016), with very few SMEs being able to go beyond the shores of their origins. Research and documented business operations show that businesses internationalize at different paces. The traditional form of internationalization is a more gradual and incremental growth into international markets while BG form is a rapid process of entry into foreign markets. These two forms differ from each other and have attracted the attention of scholars in international entrepreneurship. Researchers have investigated the determinants and factors of born-global firms (Oladimeji & Eze, 2017; Cancino & Coronado, 2014; Crick & Spence, 2005; Chetty & Campbell-Hunt, 2004). Technology, economic and social circumstances have been linked to some of the

reasons why there has been a more rapid internationalization of firms (Oladimeji & Eze, 2017).

There are three broad reasons linked to the internationalization of BG SMEs:

- a. Business models and technology,
- b. Elimination of trade barriers, and
- c. People

### **3.3.3.1 Business Models and Technology**

The advancement in information and communication technology (ICT) has also advanced several businesses around the world. The innovative ICT advancement laws also facilitated the transformation of business models and business trends (France et al. 2014) with the development of technology, also comes the need for businesses to be more efficient and effective in generating value to its stakeholders (Ashurst et al. 2012, Kim et al. 2011). The world has become a global village with advancements in technology and communication, the cost of engaging in international business operations has significantly reduced. This has made it easier to reach markets across borders thereby increasing international trade. These reductions in transaction costs include the elimination of intermediaries in many situations in the production and supply process (Frynas & Mellahi, 2011).

Digital technology offers SMEs an opportunity to be innovative and flourish. Jones et al (2014) observe that despite the bright opportunities' technology is widely believed to present to SMEs, the realities differ. There have been reasons identified in previous research to understand the gap in the adoption of technology by SMEs. McQueen & Yin (2014) point to the attitudes, capabilities, and perceptions of the management team of an SME. Peltier et al. (2012) identify the business sector, while Ashurt et al.

(2012) list the capability of the firms as the reason behind deciding to adopt digital technology by an SME. Jones et. al (2014) argue that the different reasons previously raised, fails to question existing technology. They add that it can essentially be that the technology that exists does not fit the reality, that technology is generic and fits all purposes.

Business models have changed, and there has emerged a new group of ambitious entrepreneurs who are keen to exploit the opportunities abound in global markets, taking advantage of trade incentives and advancements in technology (Adebayo, et al., 2019). Technology is supporting the bold endeavours of entrepreneurs to venture into new international markets. The internet, for example, has allowed entrepreneurs to boost the e-commerce sector yielding benefits to the African region (Antwi, et al., 2018). Technology is an important physical and digital infrastructure of every environmental ecosystem, however, Atiase, et al., 2021 point out that Africa does not currently have the technological capacity to sufficiently support the delivery of services on production of goods to meet the continents demands.

### **3.3.3.2 Elimination of Trade Barriers**

Several governments have purposefully fostered economic integration, by eliminating trade barriers (Melitz & Trefler, 2012). This has invariably encouraged businesses to reach out to a wider market. The European Union (EU), African Union (AU), Economic Communities of West African States (ECOWAS), and North American Free Trade Agreement (NAFTA) are examples of regional economic blocs aimed at economic integration and trade liberalization. These trade agreements and the elimination of trading restrictions have been attributed to the acceleration in firm internationalization (Gustafsson & Zasada, 2011).

### **3.3.3.3 People**

With the elimination of trade barriers, there has also been the elimination of restrictions of people across borders with agreed economic blocs. Employees, business managers, and owners are improving their international experience and competence in international trade. More people are learning a new language, engaging in exchange programmes, and are more willing to explore work or trade opportunities across borders (Oladimeji & Eze, 2017).

There have been studies that support the importance of entrepreneurial orientation and capabilities and employee skills in the export performance and internationalization of firms (Monteiro, et al., 2017). Findings underline the knowledge managers have of the industry and the global market, customer awareness, dynamic capabilities, risk-taking and mitigation skills, proactiveness, knowing the competition and innovation are people-centred strengths that impact on firms drive to rapid internationalization and not financial resources.

## **3.4 Relationship between Entrepreneurial Finance and Born-global SMEs**

With the growth of the internet in Nigeria, several businesses began to take advantage of the available opportunities by reaching a wider customer base through the internet (Ezepue & Ochinanwata, 2017). Some businesses set up online platforms from the start abandoning the traditional brick-and-mortar business model while others had a mix of both. These new business models attracted new funding models in Nigeria and thus growing the venture capital investments in the region. Techpoint (2019) acknowledges that the Nigerian venture ecosystem has become globally renowned and now ranks within the top 3 most attractive destinations in Africa for startup investments. With



the increase in finance options for BG SMEs in Nigeria, important questions around the impact of these funding sources on the firms are being asked.

The study of the impact of funding sources on firm performance can be traced back to research conducted by Durand in 1952, Modigliani & Miller in 1958. Since then, several other authors have explained the phenomena of capital structure (Jarallah, et al., 2018; Yapa Abeywardhana, 2017). Awoyemi & Makangu (2020) note that the performance of SMEs in Nigeria is restricted by their inability to access finance. They agree that financial institutions view BG SMEs as high risk, and not credit worthy. They add that the financial institution perception of BG SMEs has led to further decline of financial support to SMEs over the years which has continued to affect their performance. It has become more imperative for BG SMEs to source new funding sources, and explore the capital market (Awoyemi & Makangu, 2020). In addition to securing entrepreneurial funding, is the ability to secure the right amount of funding from the appropriate sources that can induce the required growth (Rogers, 2014).

The idea of financing BG SMEs can be achieved through debt and equity finance. Palacios et al (2016) note that the capital structure of BG SMEs and how the combination of debt and equity impacts the outcome of firms remains a contentious issue in corporate finance. Uremadu & Onuegbu (2019) highlights that the major claims of a business's assets are represented by the capital structure adopted. Salazer & Solo Mosqueda (2012) believes that the choice of a viable financing source by a BG SME is an important decision that should be driven by the firm's growth objectives and the need for growth and development. Some EFMs, for example, IVC and PEs document that their involvement on the board and management teams of portfolio firms is a recipe for growth and success of those firms (Gompers et al., 2020). These EFMs booster the management capacity by taking relevant positions to deal with

moral hazard and manage risks. Gompers et al. (2020) notes that venture capitals view a firm's management team as being more important than a firm's products or services or technology amongst other business characteristics. Despite several academic research and conversation that address capital structure and firm performance, Mardones & Cuneo (2020) and Palacios et al, (2016) argue that there are no clear convincing conclusions to show that the funding source does have an impact on the outcome of firms, however, Palacios et al, (2016) research finds that there is a significant and positive impact of internal sources of finance on the performance of firms but not external sources.

In studying the choices SMEs make in how they raise finance for their operations, Oladepo & Ajoseh (2015) assess SMEs' activities in the capital market, with a focus on the Nigerian stock market. They describe the capital market as a financial platform that promotes liquidity of security and assets that would have otherwise been illiquid. They add that the capital market helps raise finance (debt & equity) for a longer period. The capital market in Nigeria has been promoted to further support economic growth and development (Oladepo & Ajoseh, 2015).

The capital market has been seen to be an enabling platform to bring together borrowers and lenders, business owners, and equity providers with the aim of raising finance for SMEs or large firms (Oladepo & Ajoseh, 2015). They state that the capital market allows for the distribution of surplus wealth to businesses that need them in order to create more wealth. Investors are well-aware of the risks they face in investing but believe that the capital market provides them with functional instruments such as contracts and covenants which they could use to reduce, eliminate, or manage their risks. The Nigerian capital market is a key platform for raising finance for SMEs as

capital importation into Nigeria in the first half of 2021 reaching \$2.79 billion with foreign portfolio investment (FPI) accounting for 54.8% of total imports (PWC, 2021).

Achugbu (2017) points out that following existing literature, it has been seen that there is a significant difference between startups that have been financed by IVCs and other startups that were financed by alternative entrepreneurial financing sources. They present evidence to show that such firms financed by IVCs are more innovative and strategic, there is also improved managerial capacity capable of managing resources better. Previous literature by Gompers et al. (2020) and Gompers & Lerner (2001) tend to insinuate that firms that utilize IVC finance show a difference because IVC investors are more willing to invest sufficient funds in understanding new technologies and the market, they are interested in. Tykvova (2019) opines that this could be because IVCs typically select firms that have higher growth potentials and are thus, willing to provide adequate financing. There are other arguments to this, for example, add-on/value additions, selections, etc. These are important elements that are reviewed in the research to determine what additional value EFMs add to BG SMEs in Nigeria beyond finance. The add-on/value additions are evaluated as moderators to investigate the impact EFMs have on the performance and outcome of BG SMEs where additional value is included alongside the finance provided.

### **3.5 Empirical Evidence of Performance of Entrepreneurial Finance Models**

Different research papers that have investigated the impact of internal and external entrepreneurial financing on SMEs over the years have arrived at different results. For example, research conducted in the early 1990s finds that external entrepreneurial finance leads to a higher return (Keasey & McGuinness, 1990). From data collected from 484 SMEs in Malaysia, Mohamad, et al. (2021) find that internal and external sources of finance had no significant impact on the performance of SMEs whilst the

results pointed that the level of education of the managers, their business experiences, and the size of the firm had a positive impact on SMEs' performance.

This section of the thesis critically evaluates the empirical results and findings from previous literature on the performance of EFMs on SMEs which in this research has been ascertained to embody BG SMEs. An assessment of the impact or contributions of EFMs on BG SMEs is relevant to the research aim and research objective 2 (RObj 2) of this research which evaluates how EFMS have impacted on the performance and output of BG SMEs in Nigeria.

### **3.5.1 Impact of Deposit Bank Finance on Firm Performance**

Adelekan et al. (2019) in their research, '*Bank loans and small and medium enterprises' (SMES) performance in Lagos, Nigeria*' examined the association between access to loans and business expansion, and the association between debt financing and outputs of SMEs in Nigeria. The authors developed two null hypotheses which were then tested using data obtained from a sample size of 372 participants. In the first hypothesis of their research work tested – *There is no association between access to loan and business expansion of SMEs in Nigeria*, Adelekan et al. (2019) find that access to bank loans by SMEs do have an impact on SMEs in Nigeria. On the second hypothesis tested – *There is no association between debt financing and outputs of SMEs in Nigeria*, again this hypothesis was rejected. The results find a significant association between debt financing and SME outputs. They relate their findings to FSS (2020) and SME sector report (2007) that highlight four constraints on the performance of SMEs in Nigeria. The constraints listed include a hostile business environment, lack of access to technology, lack of access to entrepreneurial finance, and poor managerial skills. Adelekan et al. (2019) suggest that the constraints

related to lack of access to modern technology or access to skilled managers can be a consequential effect of the lack of access to finance.

Adelekan et al. (2019) in their research used *business expansion and output* as measurement metrics. The researcher notes that these measurement metrics are broad and have not been categorized. For example, business expansion as a broad term can mean market growth, product & service diversification, infrastructural & technological growth, growth in employee size, etc. On the other hand, the output can mean all profitability measurements to also include product and service outputs.

Similar research by Khan (2020) focuses on microfinance banks (MFBs) which are micro deposit banks, regulated by the CBN that provide small credit facilities to low rural and urban income earners, and SMEs. Khan (2020) examines the effect of MFBs on SME growth and development within the context of Yobe State, Nigeria. Following their analysis obtained from 41 participants comprising of sole traders, customers, staff, and management staff of the MFBs, they accept that MFB financing has a meaningful impact on SME growth and development. Khan (2020) research also points that the borrowing requirements set by the MFBs discourage SMEs from using that source of entrepreneurial finance. The requirements have included high-interest rates, amongst other strict conditions (Khan, 2020). Ajayi (2019) agrees that MFB facilities improved the performance of the business and in their research suggested a review of bank loans provided to SMEs listing downward review of interest rates and longer-tenor loans as important elements to address. A critical observation by the researcher of Khan (2020) research is that the work did not point out the age of the SMEs that participated in the data provision. The work names sole traders as participants, could this indicate the size of the firm to be very small and the capacity of the owners to judge the requirements of the MFBs as strict and unfavourable?

Earlier research by Ubesie et al. (2017) reports a different finding in their research that evaluates the *effect of deposit money banks credit on small and medium scale enterprises growth in Nigeria*. Their research acknowledges that banks have contributed immensely to the Nigerian economy by advancing loan facilities to retail and corporate borrowers. Ubesie et al. (2017) study using a multiple regression method find that the financing provided by banks to SMEs has no significant impact on SME growth. However, they find a relationship between real exchange rate and SME growth. Nonetheless, the research notes that an increase in the provision of loan capital to SMEs increase their liquidity positions and their prospects for business expansion which might invariably lead to income growth.

### **3.5.2 Impact of Grant on SME Performance**

Srhoj et al. (2020) have investigated the impact of one EFM, grant on the performance of SMEs. They questioned and measured the increase in performance output of SMEs that obtained business development grants. Their research examines the *value addition* and *sales* performance indicators of firms that have received business development grants. Their findings indicate a positive impact of the grant on the performance of SMEs. They, however, note that this impact is more significant in smaller-sized firms. Rupeika-Apoga, 2014 points that grants are typically provided to SMEs at their early stages, and at these stages the firms and their ideas might not be attractive to other structured financing such as venture capital investors, BAs and private equity firms. Srhoj et al. (2020) mention that the funding amount made available by grant providers tends to be small amounts and can be given to a larger number of SME beneficiaries. This statement could justify their findings, pointing that small firms might require smaller business capital which can translate to more significant value additions compared to larger-sized SMEs.

Research papers by Xiang & Worthington (2017) and Peter, et al. (2018) that reviewed the impact of grants provided by government agree that these grants have significant impact on SMEs' performance. Peter et al. (2018) however argues that the value added are inadequate and embodied with several restricting and bureaucratic restrictions. Xiang & Worthington (2017) note from their findings that firms that receive government finance/grants are more likely to receive other types of EFMs in the future. Financial support provided by government can also lead to technological advancements and innovations of SMEs (Doh & Kim, 2014).

### **3.5.3 Impact of Intellectual Property (IP) Backed Finance on Firm Performance**

The IP-backed finance assesses if firms that obtain finance to secure patents, trademarks, outward licensing, and copyrights achieve a higher performance as a result of the IP types received. IP protection is not common in SMEs, therefore, most research has focused on large firms (Sydler et al., 2014). That being said, some literature discusses the chances of SMEs performing higher after obtaining one or more IP type protection.

For example, Power & Reid (2020) building on similar research works in the subject area, assess the probability of IP types relationship with higher performance of start-ups in the US. Their research measures performance using eight indicators. They measure the perceived competitive advantage, assets, size, sales, ROE, profit, rate of profitability, and survival. Their research being a longitudinal research conducted on start-ups between 2004 and 2011 incorporated all aspects of IP types in analyzing the performance of start-ups. They argue that previous research had focused on just one type of IP type at a time, a situation the researcher finds in reviewing the impact of EFMs on BG SMEs.

Power & Reid make three core findings in their research. The first notes that obtaining trademarks and out-licensing IP does increase the chances of start-up firms to perform higher. Different to their first finding, the document that obtaining patent IP type significantly decreases the chances of start-up firms to be high performers. Thirdly, they find that out-licensing patents and out-licensing trademarks reduce performance while out-licensing patents and out-licensing copyrights improve performance. In addition, performance is not enhanced by registering more trademarks and out-licensing but rather there is an opposite effect.

Investigating patenting and IVC financing, Lahr & Mina (2016) highlight that IVC financing does not increase the patenting activities of portfolio firms, they find instead that patent application for technological firms decreases with IVC back financing. Lahr & Mina's 2016 research reflects that IP-backed financing and BG SME performances can be related to the specific EFM backing the IP applications. Their research points to a negative relationship between IP applications and IVC firms but eludes to the positive impact of IVC financing on the growth of portfolio firms. Taking a contrasting view of IVC financing relationship with IPs, Zhou et al. (2016) notice that patents and trademark IPs attract higher numbers of IVCs and thus higher funding sums than firms that have less or no IPs. Ayerbe et al. (2014) had previously argued that IPs depict a technologically advanced and innovative firm and are seen to be more valuable by IVCs.

The researcher observes that there has not been any research that has studied the performance of BG SMEs that have obtained IP-backed finance in Nigeria. This research ceategoricall becomes the first research that takes into account IP-backed financing in Nigeria.



#### **3.5.4 Impact of IVC, GVC, CVC and PhVC on Firm Performance**

The available research on the different IVC entrepreneurial finance options shows that there have been different impacts on the firms the finance. A good number of researchers refer to different venture capital funding options as a viable EFM in developed regions of the world (Shanthi & Schneider, 2018; Muriithi, 2017). The researcher observes that there is no known research conducted on the impact of any of the VC options on the performance and outcome of BG SMEs in Nigeria.

Zhang & Mayes (2018) conducted research that investigated the differences in the performance of firms in China backed by GVCs and IVCs. Empirical data reveals that firms that receive GVC support underperform compared to those backed by IVC. This analysis was measured on their ability to go public. Like Zhang & Mayes (2018), Cumming et al. (2017) finds that in European countries, GVC backed firms also underperformed IVC-backed firms when measuring the success in going public through IPOs or exiting through M&As.

Measuring the performance of the sales of firms, Grilli & Murtinu (2014) noted that firms that obtained only GVC funding did not experience any significant increment to their sales position. Alperovych et al. (2015) go further on Grilli & Murtinu's findings by adding that there could be a negative relationship between GVCs and firms with the possibility of productivity of GVC backed firms being destroyed after three years. Munari & Toschi (2015) research highlights though the impact of GVC on firms is modest, it cannot be inferred to cause negative impacts from their research. The measure of performance of the sample size was based on successful IPO and trade sales (Munari & Toschi, 2015)

GVCs have become more popular amongst countries, with government institutions looking to improve the impact of funds previously provided as grants (Engberg, et al., 2021). The GVC model allows governments to infuse some key features of IVC & CVC whilst providing finance, however, are still operated from the lens of public policy formulations (Pahnke, et al., 2015). For example, Uzuegbunam, et al. (2017) notes that GVCs follow the screening and selection processes of IVC but due to the goals of addressing public goals, GVCs will weigh the criteria different. The core idea behind GVC is to bridge the equity funding gap that BG SMEs and SMEs face (Dahaj & Cozzarin, 2019). There are schools of thoughts that advocate that GVCs being public funds should be invested in public rewarding ventures (Uzuegbunam, et al., 2017).

Lerner (2010) notes that GVC has generally been a failure when measuring their ability to increase the business growth, and lead to IPOs or mergers and acquisitions (M&As). The impacts of GVCs can be associated with the difference in their composition from IVCs. GVCs do not have sufficient capacity to negotiate contracts thoroughly and effectively and do not have the right independence to make decisions (Cumming et al., 2017). On the other hand, GVCs have the strength of being able to use government resources to support investee firms. This can be particularly seen in China with GVC backed firms having easier access to IPO approvals (Zhang & Mayes, 2018).

Lahr & Mina (2016); Popov & Roosenboom (2012); Kortum & Lerner (2000) find that IVCs advance the innovative performance of firms that they invest in, and this they can do with their unique managerial and coaching inputs. It can be inferred that IVC-backed firms are likely to have high performance because of the value addition they receive alongside finance. Value addition, for example, screening, monitoring, managerial and coaching inputs have been discussed in several research as a factor that can influence the performance of IVC and CVC-backed firms. Gu & Lu (2014) hint

that the experience level of the IVC firm can translate to their investee firm positively. Munari & Toschi (2015) findings differ, with data obtained from 628 IVC-backed firms indicating that there is a negative effect of IVC funding on the financial performance of firms.

The closest research done on the different IVC types in the regional context was conducted in Uganda. Kato & Tsoka (2020) focused on the *impact of venture capital financing on small and medium sized enterprises' performance in Uganda*. The context of Uganda reflects a similarity with the environmental context of Nigeria with the IVC market not being largely developed. Their research notes that the IVC industry is dominated and driven by IVC with much of the financing provided to them. TA mixed-method research that obtained data from 90 SMEs in Uganda. Their research agrees that SMEs in Uganda that obtained IVC finance experienced tremendous growth. The performances of these SMEs were measured by their sales turnover, ROA, and profitability. The revenue growth was higher IVC backed firms, with a growth rate of 15%, 22% and 18% from 2016 to 2018 respectively. Overall, their research discovered that 20% of firms that received IVC failed, while 30% were experiencing difficulties with 50% of them operating as expected.

The differences in findings of the different venture capital types can be geographically induced (Munari & Toschi, 2015; X Tian, 2011). This notion is pertinent fundamental in selecting Nigeria with a unique ecosystem as the context of this research. The unique characteristics of Nigeria which include the level of technology advancement, population, political stability, export and import dynamics.

### 3.5.5 Impact of Business Angel Financing on Firm Performance

BA financing has played an important role in financing and bridging the funding gaps for BG SMEs, start-ups, and SMEs globally. However, not many research papers have surveyed the impact BA financing has had on the firms they invest in. Croce et al. (2018) obtaining data from Crunchbase, a database platform that keeps business record for both private and public companies examine what drives the performance of high-tech start-ups that have obtained BA financing. Their research identifies two categories of performance outcomes for BA investee firms which they describe as *interim performance* and *ultimate performance*. The interim performance measurement metrics include – the total amount of finance raised by the investee firm, follow-on rounds, and follow-on IVC financing, whilst the ultimate performance includes IPO and M&A outcomes. It is hypothesized that BAs have the capabilities and investment attitude to positively impact high-tech start-ups at the early-stage investment but have a negative relationship at later stage investments (Croce et al., 2018). They relay that BAs like IVCs engage in monitoring, which has been noted as a value-addition and investment behaviour. This value-addition can be argued to improve the performance of investee firms. Croce et al. (2018) has considered the monitoring practices of BAs alongside their links to IVCs for follow-up fund injections and a focus on localized firms while analysing the outcomes of high-tech start-ups. Re-echoing the influence value-addition can have, social capital has been studied in academic literature as contributing to firm growth and performance. For example, Pirolo & Presutti (2010) analyze the impact of social capital on investee firms by examining the impact on start-ups' performance growth in Rome, Italy. They reiterate the notion that firm performance and social capital development could be influenced by the environmental context of business operations. They measure performance

using quantitative indicators which include, sales level/market share, profit, ROA, ROE, ROS, and earnings before interest and tax (EBIT). Profitability indicators are usually used as principal financial measures by EFMs to determine the progress and success of their portfolios (Kato & Germinah, 2022).

Croce et al. (2018) research find that BAs capabilities and experiences positively impact the interim performances of high-tech start-ups. They also note that firms that have positively achieved interim performances are more likely to achieve ultimate performances.

### **3.5.6 Impact of Accelerators and IPS on Firm Performance**

Accelerators function by making available a wide range of resources that can be shared amongst several entrepreneurs and their firms. In addition, accelerators offer their expertise within a specific location, which could be referred to as a *hub* or *boot camp*. These hubs and boot camps expose firms under accelerators to the expertise of BAs, successful entrepreneurs, IVCs and other corporate executives (Hochberg, 2016). Using their expertise, they could support several firms with their business model development, business management, risk evaluation and management, technology development, market strategy and investment management plans (Koo, 2018), which could include links to other EFMs (Cohen & Hochberg, 2014).

Research conducted by Koo (2018) on the impact of accelerators on the performance of 52 start-ups in Korea finds that firms that receive mentoring and have good investor ties are positively influenced and are likely to receive follow-up funding. Mentoring opportunities for these firms positively influence their ability to obtain follow up rounds of fundings. Another key finding in Koo (2018) estimates that younger CEOs in start-up firms are likely to have improved performance over time. Mentoring and

investor engagement was also found to have a significant influence on the performance of firms in Chile (Mejia & Gopal, 2015). They state in their findings that companies that were surveyed showed positive impacts around sales and business development with a higher capacity of attracting follow up funding. Looking at data obtained from Chile, Gonzalez-Uribe & Leatherbee (2018) research aligns with Mehia & Gopal's research that accelerators have a positive and significant influence on the performance of firms in the region.

Onyima et al. (2013) found out from surveying 40 businesses in Wukari Local Government in Nigeria, that IPS had a positive impact on the pre-founding stages of firm activities. Ugbaja (2019) notes that there are several value-additions that fall under the overall value system of the IPS that could translate to success. Obunike (2016) agrees that IPS contributes to firm profitability and can positively improve business networking for firms.

Accelerators like IVCs and PEs engage in mentoring and supervision of firms (Gompers et al., 2020; Koo, 2018; Cohen & Hochberg, 2014). Comparing IVCs to Accelerators, Bernstein et al. (2016) agrees that both EFMs provide additional value aside from providing capital, however, IVCs contribute relatively nothing to the creation and innovation of their portfolio firms. Accelerators on the other hand have a focused and intense mentoring sessions for an extend period, for example six months (Koo, 2018).

### **3.6 Research Framework**

The research framework highlights the conceptual model that will be used to critically evaluate the relationship between EFMs and the profitability, firm structure and SROI of BG SMEs. There are debates on the configuration of EFMs having any significant

influence on the performance of SMEs and BG SMEs (Kato & Tsoka, 2020). Literature indicates the role firm size; management competence and principal and agent relationship play in the outcome of BG SMEs that have obtained one or more EFMs. The research framework guides the research process of how the research addresses the research questions and achieves its aim and objectives (see figure 3.4).

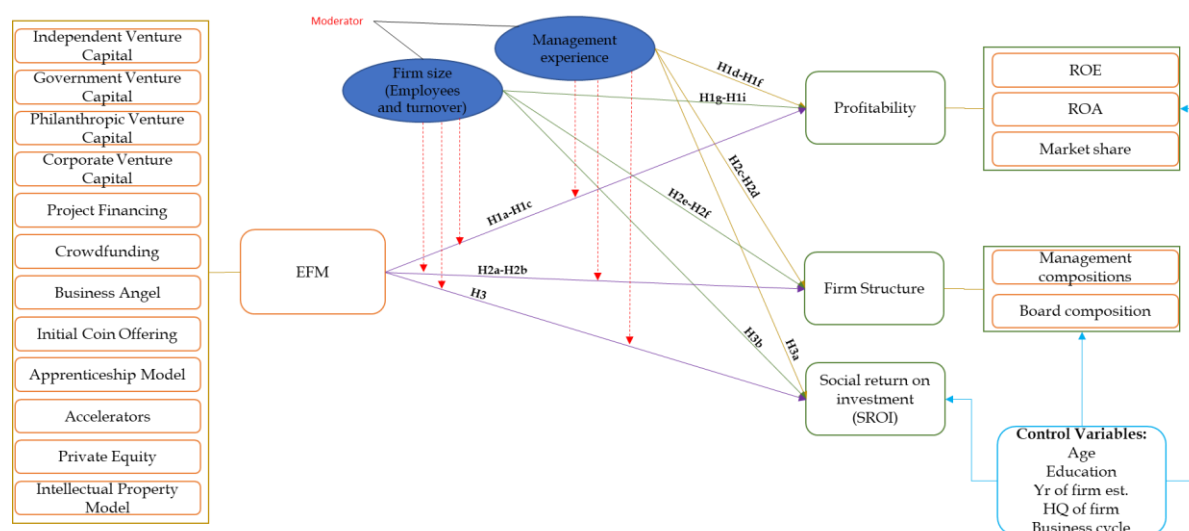
Following from the research aim to critically analyse the impact of EFMs on the outcome and performance of BG SMEs, independent, dependent, and moderating variables were identified (see the table 3.4).

**Table 3.4: Research Variables**

Variable Type	Variable Description
Independent	EFMs (IVC, GVC, PhVC, CVC, BAs, ICOs, crowdfunding, PE, etc.)
Dependent	<ul style="list-style-type: none"> <li>• Profitability (ROA, ROE and market share)</li> <li>• Firm structure (management composition and board composition)</li> <li>• SROI</li> </ul>
Moderator	<ul style="list-style-type: none"> <li>• Management experience</li> <li>• Firm size (Employees and turnover)</li> </ul>
Control variable	<ul style="list-style-type: none"> <li>• Age</li> <li>• Education</li> <li>• Year of firm establishment</li> <li>• HQ of firm</li> <li>• Business cycle</li> </ul>

*Source: Created by the Researcher*

**Figure 3.4: The Research Framework**



*Source: Created by the Researcher*

Measuring firms' outcome and performance are critical elements in understanding the survival, growth, and development of these BG SMEs. Within a competitive environmental ecosystem such as Nigeria, the survival of firms is a collection of sustainable positive performances from their operational activities (Lawal, et al., 2018).

EFMs represent the different forms of innovative external finance options available and accessible to firms. Different EFMS were identified in this research through critical review of existing literature. EFMs identified include, independent venture capital, government venture capital, Philanthropic venture capital, corporate venture capital, crowdfunding, business angels, initial coin offering, apprenticeship model, accelerators, private equity, project financing and intellectual property model.

The hypotheses were developed around three key variables – profitability, firm structure and SROI.



## Firm Performance - Profitability

**Profitability:** Capital is an important ingredient in the daily operations, the short- and long-term growth and development of any firm (Cassar, 2004). Reports note that almost 70% of SMEs, including BG SMEs fail within 5 years of operations (Kato & Tsoka, 2020; World Bank, 2016). Some sectors have argued that this has been as a result of BG SMEs' inability to access external finance (Bushe, 2019; Douglas, et al., 2017). A different perception argues that some of these failed BG SMEs had received substantial external funding and still failed, thus inferring that the presence of capital has not guaranteed survival or success of a BG SME.

The profitability of BG SMEs highlights the returns that these firms have earned from their investment operations and trading activities (Watson, 2016). In this research, the profit performance of BG SMEs is assessed by understanding the firm performance post receiving one EFM (Eniola & Entebang, 2015b). The research measures the profitability of BG SMEs using the three indicators used in similar research areas. The ROA, ROE and market share were measured as profitability performances of BG SMEs that have obtained external finance (see table 3.5 and figure 3.5) (Brealey, et al., 2019; Agrawal, et al., 2019).

Assessing the profit of the BG SME helps us identify the returns earned by these firms in their trading and investment operations (Watson, 2016; Pride, et al., 2008). There are four ratios used in calculating the profitability of firms – Gross profit margin, return on capital employed (ROCE) operating profit margin, and net profit margin (Watson, 2016). These return metrics are also known as book rates of return (Brealey, et al., 2019; Siminica, et al., 2012). For this research we focus on calculating the return on assets (ROA) of firms by using the formula – net income + after tax interest divided

by the total assets (Brealey, et al., 2019; Agrawal, et al., 2019; Daniels, et al., 2018; Batchimeg, 2017; Siminica, et al., 2012).

ROE measures the income shareholders receive from their investment while ROA measures the income the firm receives against their debt and equity holdings and total assets (Brealey, et al., 2019). The ROA performance is an important measurement metrics as it considers all forms of assets the company owns, including debt and equity finance. This gives a wholistic view of the impact of entrepreneurial finance models they might have received on the firm outcome. Siminica, et al., (2012) describes ROA as the percentage baseline used to measure the profit made from a new investment. Brealey, et al. (2019) note that the more assets a manager must operate with, the higher chance they have at generating a larger economic value added (EVA).

ROA is calculated as:

$$\frac{(\text{after-tax interest} + \text{net income})}{\text{Total assets}}$$

Source: (Brealey, et al., 2019)

or

$$\frac{\text{Net operating profit after tax}}{\text{Total assets}}$$

Source: (Agrawal, et al., 2019)

Agrawal, et al. (2019) stipulates that ROA provides better information about a firm's internal growth. However, when comparing ROA to EVA, they argue that ROA was hindered by its focus on historic statistical data making it one-dimensional. Agrawal,

et al. (2019) in their research also acknowledge that ROA has been found by experts as being significantly relevant in predicting future value creation of firms.

In the research conducted by Sun & Kim (2013) they explore the positive impact of customer satisfaction on the performance of firms. They focus on the increase in sales and the reductions in costs as their measure of performance. Sun & Kim (2013) believes that the satisfied customer will remain as 'retained' customers and will cost the company less to have retained customers than the process of trying to recruit new customers. There have been several other measures of performance. Sun & Kim (2013) assessed the ROA, Anderson & Sullivan (1993) assessed the total income, Zeithaml (2000) on ROI, Manafi et al. (2011) on net income, and Williams & Naumann (2011) on earnings per share.

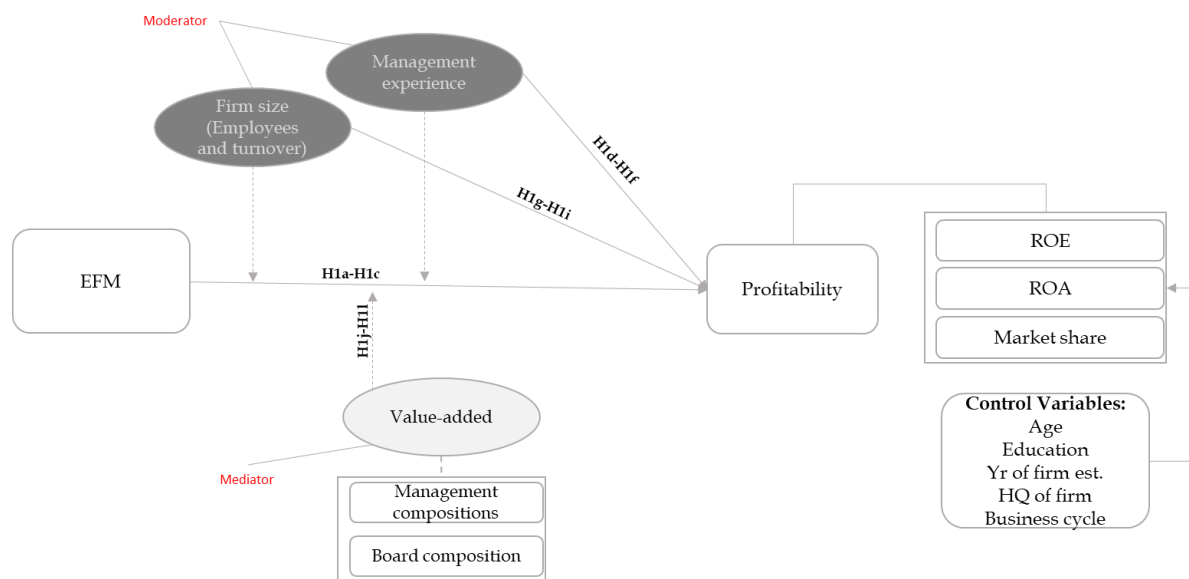
To measure the profitability performance of BG SMEs in Nigeria, the ROE, ROA and market share are evaluated (Havrylchyk & Mahdavi Ardekani, 2020; Peter et al., 2018). The profit outcomes will then be compared to the profit performances before receiving funding from one/more of the entrepreneurial finance models discussed above.

**Table 3.5: Hypotheses Development Showing the Relationship between EFMs and Profitability**

<b>Code</b>	<b>Hypotheses Description</b>
<b>H1</b>	<b>There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and profitability</b>
H1a	There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and the Company's return on equity (ROE) of BG SMEs.
H1b	There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and the Company's return on assets (ROA) of BG SMEs.
H1c	There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and the market share of BG SMEs.
H1d	Management experience positively moderates the impact of EFM on the ROE of BG SMEs.
H1e	Management experience positively moderates the impact of EFM on the ROA of BG SMEs.
H1f	Management experience positively moderates the impact of EFM on the market share of BG SMEs.
H1g	Firm size positively moderates the impact of EFM on the ROE of BG SMEs.
H1h	Firm size positively moderates the impact of EFM on the ROA of BG SMEs.
H1i	Firm size positively moderates the impact of EFM on the market share of BG SMEs.

*Source: Created by the Researcher*

**Figure 3.5: Research Model Showing the Relationship between EFMs and Profitability**



*Sources: Created by the Researcher (Extract from the research framework)*

## Firm Structure

**Firm Structure:** This research investigates the firms' management structure and board structures and the added value provided by EFM to BG SMEs. The notion is to provide an understanding of how firms' top management, and business shareholdings evolved after obtaining EFM. Table 3.6 highlights the hypotheses developed to measure this outcome while figure 3.6 reflects the research model that provides the guide to the research process. Some EFMs do provide additional value through coaching and management schemes (Luukkonen et al., 2013), with the intention of restructuring and strengthening management capabilities.

The firm structure as an outcome measurement in this research assess the management and board composition of a BG SME. The firm structure highlights the possibility and possible impact and role the management and board play in the internationalization and the management of resources in a firm. In this research the

firm structure is assessed within two categories, management composition (Agwu, 2018), and board composition (Roffia, et al., 2021; Arzubiaga, et al., 2018).

The board composition could determine the social capital which could invariably impact on the performance of the firm (Bouazza, et al., 2015; Johnson, et al., 2013). Social capital could include social networks, market access, knowledge and experience, risk management amongst others (Arzubiaga, et al., 2018). Similarly, the management working in alignment with shareholders can stimulate available resources to create and exploit opportunities to increase the performance growth of the BG SMEs they manage (Branislav, 2014). The management team is responsible for the development of the right strategic management that will be geared towards achieving long and sustainable goals of the firms they manage (Koech & Were, 2016). As highlighted in 2.3.1 of chapter 2, some management teams are not aligned with the vision and goals of the shareholders, thus breeding a conflict of interest. Agency Theory theorises this conflict exists in the firm structure which could in turn impact on how resources are managed and the overall outcome of firms.

This research measures the outcome of the firm structure in relation to the type of EFM that the BG SME has obtained. Essentially in line with the aim of the research which is aimed at statistically measuring the impact of EFM on the outcome of firm structure, the data analysis will seek to identify how each EFM has influenced the management and board composition. This outcome is important to highlight further the added value provided by EFMs as has been elaborated in the literature chapter of this thesis.

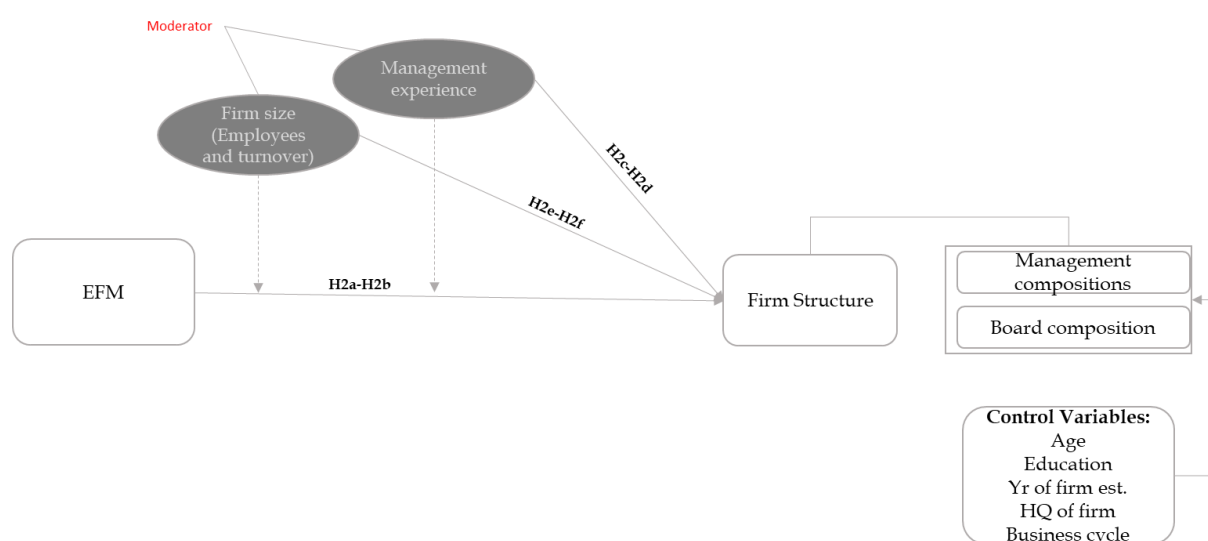
**Table 3.6: Hypotheses Development Showing the Relationship between EFM's and Firm Structure**

<b>Code</b>	<b>Hypotheses Description</b>
<b>H2</b>	<b>The type of EFM obtained would directly cause a change in the firm structure of BG SMEs</b>
H2a	The type of EFM obtained would directly cause a change in the management composition of BG SMEs
H2b	The type of EFM obtained would directly cause a change in the board composition of BG SMEs
H2c	Management experience moderates the impact of EFM on the management composition of BG SMEs.
H2d	Management experience moderates the impact of EFM on the board composition of BG SMEs.
H2e	Firm size moderates the impact of EFM on the management composition of BG SMEs.
H2f	Firm size moderates the impact of EFM on the board composition of BG SMEs

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*Source: Created by the Researcher*

**Figure 3.6: Research Model Showing the Relationship between EFMs and Firm Structure**



*Sources: Created by the Researcher (Extract from the research framework)*

### Social Return on Investment (SROI)

**SROI:** Extensive literature reviewed by the researcher indicates that little research has focused on the relationship between SROI and EFM in BG SMEs. SROI has attracted more interest in several industries with more business and finance stakeholders calling for increased statistical evaluation of existing social values created by firms (Pathak & Dattani, 2014). SROI has been described as firms' measure of their overall performance which includes social returns (Gosselin, et al., 2020). There are distinct business models that exist to address social issues whilst also aiming for financial returns (Spieth, et al., 2018). There is currently no research found that attempts to test the impact EFMs have on the SROI goals and performances of BG SMEs. This research boldly leads in this area, by developing hypotheses that weigh the relationship between SROI and EFMs (see table 3.8 and figure 3.8).



Several business ideas have transformed the models operated by some firms (Block, et al., 2018). Some of the innovative business models have been seen to add substantial value beyond just profit measures as has been traditionally dominant (Rotheroe & Richards, 2007), and there is increasing pressure to reflect social impact values provided by firms (Pathak & Dattani, 2014). Rotheroe & Richards (2007) postulates that such firms could be described as social enterprises and they contribute to sustainable growth and development of the macro-economy. Haugh (2007) describes social entrepreneurship as a model that allows a firm to foster the interests of a community using entrepreneurial business models. This business practice involves most of the basic core operations that can be seen in a typical business. Firms created under the social enterprise model are more passionate in addressing social issues and creating social value to promote the interests of communities rather than for profit (Luke & chu, 2013).

Research and businesses have advocated that the performances of social enterprises would be captured not only financially but also encompassing social and environmental performances. Nicholls (2009) describes SROI as the assessment of the overall performance and return of a firm. This assessment of performance includes the social returns of a firm. Until recently, there has not been enough attention to the possibility of measuring social value performance created by firms; this led to the formation of SROI (Rotheroe & Richards, 2007). Earlier research by Eccles (1991) noted that finance as a performance metrics was only an element in a wider performance management system and a guide report by the Cabinet Office and the Office of Third Sector highlighted by Pathak & Dattani (2014) clarified that SROI is broader than numbers, and involves environmental, social, economic cost and benefits. Eccles (1991) pointed out the need to explore the measurement of value

generated by enterprises. Pathak & Dattani (2014) highlighted three key importance and reasons for the SROI (see figure 3.7). Kwizela et al. (2018) explain that SROI is a method of measurement, which assesses the return on investment based on how people affected by that social investment feel or appreciate it. Kwizela et al. (2018) in their research that evaluates the social return on the provision of liquid and solid waste management in Tanzania, adopt a participatory approach to data collection engaging in stakeholder meetings and conducting interviews.

**Figure 3.7: Key Importance and Reasons for SROI**



Source: Pathak & Dattani (2014)

The SROI is important to help business owners/managers measure and monitor social impact performance for both internal and external purposes. Pathak & Dattani (2014) also note that it is important to help reinforce the mission and goals of institutions focused on creating social values, whilst also helping such institutions to raise the needed funding to drive institutional/business objectives.

The SROI model which was developed by Roberts Enterprise Development Fund (REDF) assigns monetary figures to social and environmental returns to calculate the social values created by enterprises (Rotheroe & Richards, 2007). According to Rotheroe & Richards (2007), SROI calculates firms' social value creation in relation to the cost of creating such value. Lingane & Olsen (2004) define SROI as the social benefit that is measured against the financial input and their impact on non-investor stakeholders of a firm. They mention that these stakeholders could include employees, external individuals, local communities, and the society. Many have argued against SROI, reasoning that financial benefits and social returns are not compatible (Lingane & Olsen, 2004). New Philanthropy Capital (2010) defines SROI as taking into account various impacts of an organisation's activities and evaluating them economically through the lens of a cost-benefit analysis.

Typically, the computation is to evaluate the cost-benefit (Rotheroe & Richards, 2007). The formula this research adopts in measuring SROI:

SROI =

$$\frac{\text{Net Present Value of benefits}}{\text{Net Present Value of Investment}}$$

Source: (Rotheroe & Richards, 2007)

The SROI has been tested by the New Economics Foundation (NEF) and their approach focuses on four key considerations (NEF, 2004; NEF, 2005). NEF (2005) argues that SROI is composed of both quantitative and qualitative components. NEF's test and calculation process involves a consideration of some factors. The first consideration includes stakeholder engagement. This requires the identification of the

objectives of stakeholders and its alignment to sustainability report and the SROI process. The second consideration is materiality, which analyses the important elements defined by the stakeholders. The third NEF consideration is the impact map. The impact map is a causal effect chain strategy that helps understand how operations are executed to achieve the firm's goals - from inputs to outputs. Finally, the appreciation of deadweight considers and measures outcomes that occur without any impact from the firm. Within the concept of SROI, the deadweight is described as the percentage difference that is seen between events that occurred (factual) and counterfactual events (Nielsen, et al., 2021). They are outcomes that would have happened irrespective of any actions of the firm. Pathak & Dattani (2014) describe these considerations as stages of SROI, and they argue that there are six stages. The first stage they describe as the identification of major stakeholders. The second stage involves the mapping of outcomes. The next stage is the provision of evidence of outcomes, while the fourth stage requires the establishment of impacts from organisational activities. The final stage calculates the use and application of the report.

In research conducted by Sheridan (2011), which reviewed data from the State of Social Enterprise Survey 2009, it was found that the SROI measurement tool was not widely used. Another practical difficulty of SROI is being able to attribute financial sums to intangible outcomes as self-esteem or confidence (Sherida, 2011), or mental Health (Mat Jones, 2012). Cordes (2017) suggests that both cost-benefit analysis and SROI can be used to measure performance in social enterprises. Muyambi et al (2017) states that SROI is built on the concept of cost-benefit analysis (CBA). Hunter et al. (2020) clarifies that SROI measures the benefit-cost ratio which calculates the return on every \$1 invested in creating a social value. Typically, this asks for every \$1 the

company spends on activity ‘A’ what is the return? (Willis et al., 2018). Matt Jones (2012) & Lingane & Olsen (2004) state that the SROI network has developed a set of principles guiding SROI. Lingane & Olsen (2004) in their research list ten guidelines (see table 3.7). The guidelines were categorized into the *construction* of the reasons and social value created. The next category is the *content* which could include the region or industry the social value is created; the *certainty* of activities risks into consideration and finally the *continuity* that allows for ongoing monitoring of social value and impact.

**Table 3.7: The Standard for Social Return on Investment Analysis**

The Standard for Social Return on Investment Analysis	
Category	Guidelines
Construction	<p>Guideline 1. Include both positive and negative impacts in the assessment.</p> <p>Guideline 2. Consider impacts made by and on all stakeholders, including those inside the company itself, before deciding which are significant enough to be included in the assessment.</p> <p>Guideline 3. Include only impacts that are clearly and directly attributable to the company’s activities. Be conservative with leaps of faith and don’t take credit for more than your organization can realistically affect.</p> <p>Guideline 4. Avoid double counting the value (financial and social) created by the company and avoid using market valuations of social impacts where they do not reflect full costs and benefits.</p>
Content	<p>Guideline 5. In industries or geographic areas in which impacts would be created by the existence of any business, do not count these impacts. The SROI should describe what makes the company different from a standard venture in the industry (i.e., from its competition).</p> <p>Guideline 6. Only monetize impacts if it is logical given the context of the impact, business, or industry.</p> <p>Guideline 7. Put numeric metrics into context (e.g., this period versus last period, this company versus similar companies) to give the social return on investment meaning.</p>
Certainty	<p>Guideline 8. Address risk factors affecting the SROI in the assumptions and carefully consider and document the choice of discount rate for social cash flows.</p> <p>Guideline 9. Carry out a sensitivity analysis to identify key factors influencing projected outcomes.</p>
Continuity	<p>Guideline 10. Include ongoing tracking of social impact.</p>

Source: Lingane & Olsen (2004)

SROI has become increasingly popular and recognized as the measuring tool used in organizations and businesses to measure value created (Willis et al., 2018). Lingane & Olsen (2004) and New Philanthropy Capital (2010) acknowledge that there are challenges SROI faces, for example, the availability of data and the quality of the data. Lack of quality has been observed to be a challenge to firms in Nigeria, especially with BG SMEs. Lingane & Olsen (2004) note that SROI should not be used as a sole measurement of social performance but should be used alongside other qualitative measures to gain a holistic view of social value created by businesses & organizations. In a more recent study Willis et al. (2018) highlights that SROI involves deciding how social outcomes had the most impact on stakeholders, and the quantitative part involves attaching monetary values to these outcomes (cost) against the value created (return). SROI can be used not only to measure actual social value created but also can be used to forecast and project how much social value is expected to be achieved based on a certain amount of input or investment (Department of Health, 2010). Department of Health (2010) lobbies that more than using SROI to determine performance is that it can be used to engage shareholders and stakeholders in other purposeful ways. Millar & Hall (2013) concur with the Department of Health (2010) and show in their research how SROI was used to feature the contributions of commissioners in creating social value, therefore giving them an opportunity to be paid.

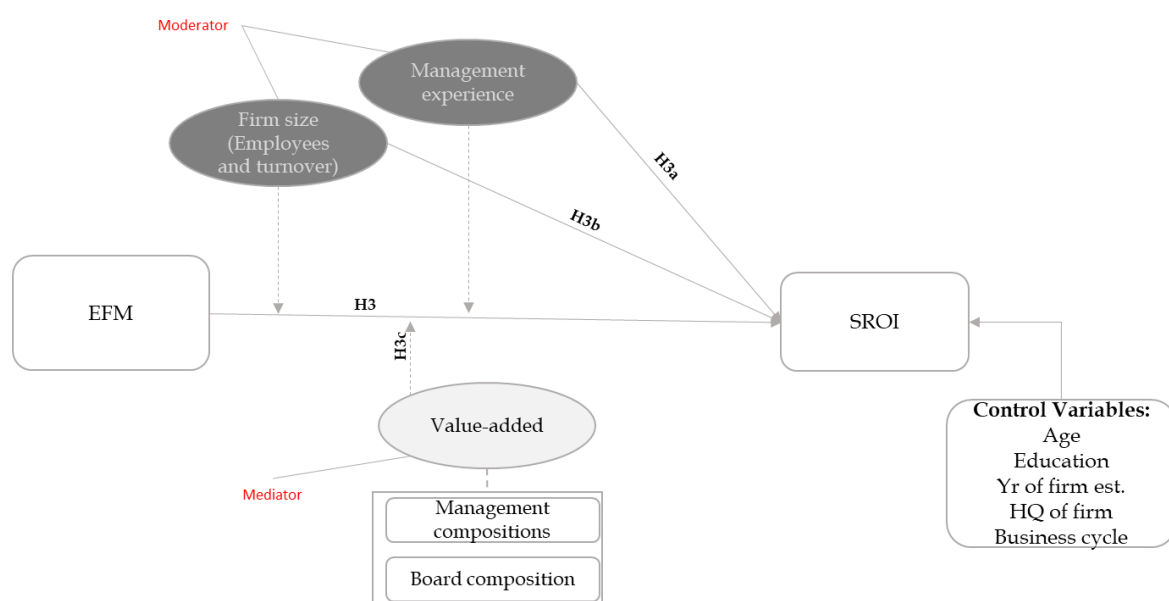
The SROI is evaluated in this research as part of the performance metrics measured to determine the impact of EFMs on BG SMEs in Nigeria.

**Table 3.8: Hypotheses Development Showing the Relationship between EFMs and SROI**

Code	Hypotheses Description
<b>H3</b>	<b>There is positive dependence between the type of EFM obtained and the social return of investment (SROI) performance of BG SMEs</b>
H3a	Management experience positively moderates the impact of EFM on the SROI of BG SMEs
H3b	Firm size positively moderates the impact of EFM on the SROI of BG SMEs

*Source: Created by the Researcher*

**Figure 3.8: Research Model Showing the Relationship between EFMs and SROI**



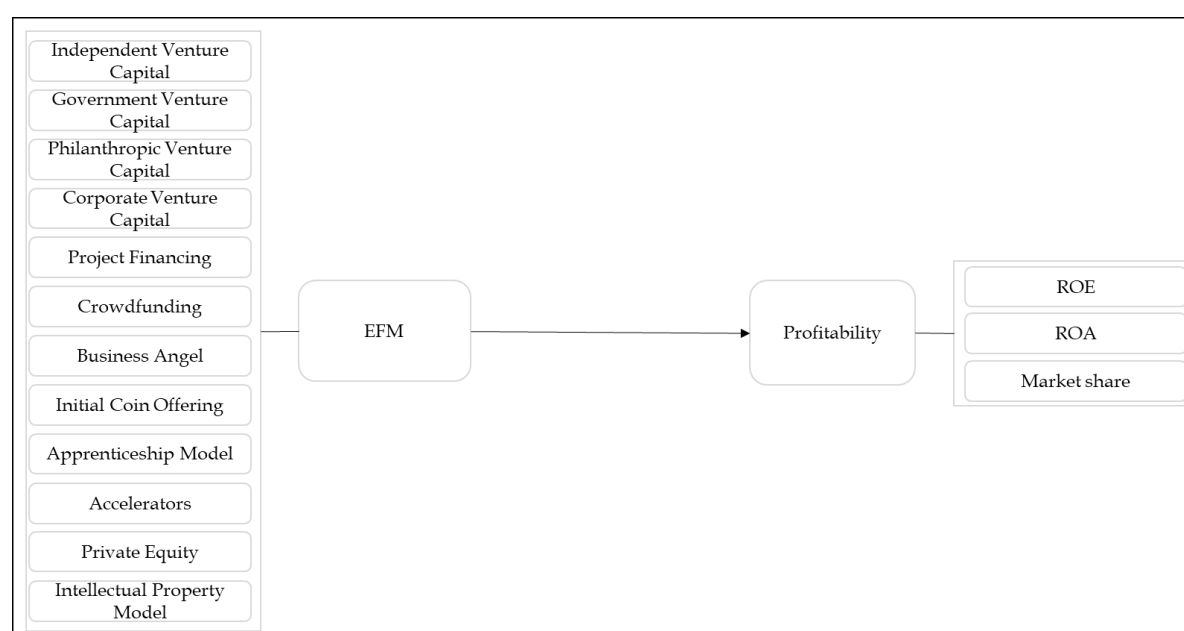
*Sources: Created by the Researcher (Extract from the research framework)*

The relationships identified in the research framework are extracted into units which have been further explained under the following subsections.

### 3.6.1 Entrepreneurial Finance Models and Profitability

This research measures the impact of EFM on the profitability of BG SMEs, therefore addressing the RQ1 – “*Is there a positive, negative or no impact of EFM obtained on the profitability of BG SMEs?*”. Figure 3.9 illustrates the relationship between the different EFMs, and the different profitability metrics being measured in this research.

**Figure 3.9: Relationship between EFM and Profitability**



*Sources: Created by the Researcher (Extract from the research framework)*

The EFMs have over the years provided external finance options for firms in different sectors at their different business cycle. The structure and framework of the EFMs are different as has been observed in the literature review chapter of this research. The idea for firms to access one or more EFMs has been hinged on the needs of the firms. These needs including but not limited to finance for business development, business expansion, daily operations, profitability growth, improved overall performance amongst others. The underlying concept of their needs is built around have access to finance to bridge funding gaps. Statistics point that 50-70% of SMEs, including BG



SMEs fail between 3-5years of starting business operations in Nigeria (Kato & Tsoka, 2020; World Bank, 2016). Many businesses that have collapsed and that face developmental challenges have blamed their survival mayhem on the inability to access external finance. Investigation highlights that these failed businesses include firms that had received one or more external finance listed under the EFMs.

It has become increasingly important to learn and understand the impacts the EFMs that businesses obtain have on their profitability. Pirolo & Presutti (2010) studied the impact of social capital on the performance of start-up firms. Their research weighs the economic and innovative impacts on performance. Some may disagree with the operation dimension of social capital not directly providing financial capital, there are agreements that the model provides resources which are consciously aimed at influencing the current position of the investee firm. In addition, some social capital resources are noted as value-added services provided by IVC and CVC EFMs. For example, management and board expertise, social networks, etc. To measure the economic performance of the start-up firms, Pirolo & Presutti (2010) reviewed the values of the profitability items had moved or changed in values. Their performance variables include the sales level, change in sales, profit, earnings before interest and taxes (EBIT) return on sales (ROS), return on assets (ROA) and return on equity (ROE). This research draws attention to the need to understand the integral impacts to the outcome of firms beyond simply, the ability to bridge financing gaps. Managers and business owners can see from the results of this research the possible value the different EFMs provide to their firms and their firms' performance (Osuji & Odita, 2012).

The model configuration was also used by Ajayi (2019) in their research, measuring the performance of SMEs in Nigeria that had obtained finance through bank lending

and crowdfunding. However, their research did not specify what indicators of performance were measured. Kato & Tsoka (2020) measured the sales turnover, profitability and ROA of SMEs that had received VC financing to ascertain the impact the EFM had on the performance of the SMEs. To address some key configurations of the research framework this research proposes the following hypotheses:

***H1:*** *There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and profitability*

***H1a:*** *There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and the Company's return on equity (ROE) of BG SMEs.*

***H1b:*** *There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and the Company's return on assets (ROA) of BG SMEs.*

***H1c:*** *There is positive dependence between the type of entrepreneurial finance model (EFM) obtained and the market share of BG SMEs.*

This research hypothesizes that IVC, CVC, Crowdfunding, and BAs would have a significant positive effect on the profitability of BG SMEs. The expected impact is developed following the control measures by IVCs and CVCs to address agency risks in the interactions between EFMs and the BG SMEs. The expertise of business management by IVC, CVC, and BAs, and their traits of possible involvement in management composition through human capital management could lead to a positive impact on BG SMEs ROE, ROA and market share.

This research proposes that obtaining a GVC, Grants, PhVC or Bank EFMs would have a neutral impact on the profitability of BG SMEs. Thus, they would not have any impact on BG SMEs profitability. Additionally, the interaction between these EFMs

and BG SMEs could lead to a higher risk of agency problems. Agency problems occur when there is a conflict of interest between the management (agents) and the stakeholders (principals) of a company. In this context, it suggests that the EFMs' interests may not align with the long-term profitability of the BG SMEs, which could lead to potential conflicts.

Furthermore, the research points out that there is a higher risk of conflict of interest and fund misdirection with these EFMs. This means that the funds provided by these mechanisms may not be utilized in the best interests of the BG SMEs, as the EFMs may not have strong contractual obligations or active involvement in monitoring the activities of the SMEs after providing the funds.

IVCs in their form of operations and activities would have the highest significant positive impact on the profitability of BG SMEs. This is supported by literature that highlight that IVCs are professional firms that provide funding and value addition to BG SMEs which could impact positively on the profitability of these firms. In addition to funding, IVCs often bring in experienced professionals and industry experts to advise and guide the management team of BG SMEs. This expertise can help the companies make informed decisions, avoid pitfalls, and optimize their business strategies. The IVC operational model means that they often work closely with portfolio companies to improve their operational efficiency, streamline processes, and optimize cost structures, which can directly impact profitability.

### **3.6.2 Management Experience as a Moderator between Entrepreneurial Finance Models and Profitability**

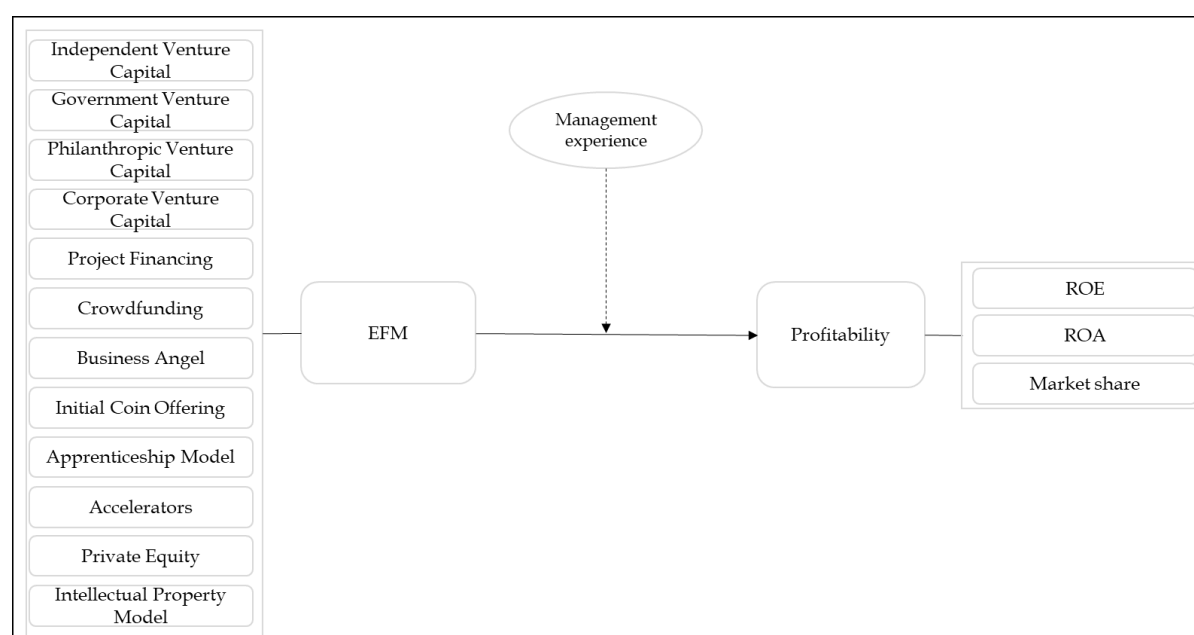
The quality of the management composition and board composition is vital to BG SMEs to enable the firms efficiently manage and control their resources (Bouazza, et

al., 2015; Zarook, et al., 2013). It is believed that managers and business owners with longer years of experience can more quickly identify and process opportunities and risks in the market. Building and developing industry knowledge through practical on the job management is seen to be more effective than formal and theoretical trainings (Aladejebi, 2018). There are other research works, for example, Li, et al. (2016) who disagree that human capital and quality of the management adds positive value to the growth of a firm. They suggest there are other factors within the operational system that determine the performance of the firm. In this research, information about the participants educational qualification has been recorded but has been controlled. Management experience has been measured as a moderating variable, putting into perspective the influence this has on firms' performance as indicated by human capital theorist (Hussain, et al., 2022; Presutti & Odorici, 2019).

Research around the influence of management experience and overall human capital on performance show varying results (Popoola, et al., 2019). Management experienced in different research is described as entrepreneurial experience and understudies this as habitual and nascent experience (Miao, et al., 2017). This invariably distinguishes between a more experienced manager/business owner and a less experienced manager/business owner. They speculate that the management experience level will relate with the performance of a firm differently. Their research believes that management teams with less experience will likely have lower confidence and expertise and will likely have weaker relationships with a firm's positive performance. They measure management experience (entrepreneurial experience) via financial performances of firms. These measures included archival data of the ROA, sales, and profit of the firms.

The figure 3.10 below illustrates the influence of management experience on the interactions between different EFMs and profitability.

**Figure 3.10: The Relationship between Management Experience, EFM and Profitability**



*Sources: Created by the Researcher (Extract from the research framework)*

The EFMs aim to improve the capacity of the investee firm by building the capacity of their management team and employee knowledge (Nwankwo, et al., 2017). Previous research suggest that a good composition of management practices could positively impact on the profitability, development, sales, and sustainability of firms (Bouazza, et al., 2015). Value-added services have been argued to exist in some EFMs, and more in some than others. On flip side of the argument is expression of fear that some EFMs can engage in ‘value-subtracting’ (Luukkonen, et al., 2013). This in some cases can be instigated through the corrective measures EFMs might initiate to bridge or solve principal-agent conflicts of interests (Higashide & Birley, 2002).

To further address some key configurations of the research framework this research proposes the following hypotheses:

**H1d:** *Management experience positively moderates the impact of EFM on the ROE of BG SMEs.*

**H1e:** *Management experience positively moderates the impact of EFM on the ROA of BG SMEs.*

**H1f:** *Management experience positively moderates the impact of EFM on the market share of BG SMEs.*

Management experience as a moderator would significantly positively influence the profitability of BG SMEs that have received crowdfunding, Bank finance, PhVC, GVC, and government grants. Invariably, the more experienced the management team of a BG SME is, the better the finance provided by these EFMs performs. Nwankwo et al. (2017) indicate that these EFMs can build on the firm's existing management capacity to improve the firm's performance. The hypotheses are built on the human capital theory that supports that management knowledge and expertise can increase the value firms receive (Bouazza, et al., 2015).

The influence of management experience would have a significant positive influence on IVC, CVC, PhVC, Accelerator and BAs forms of EFM.

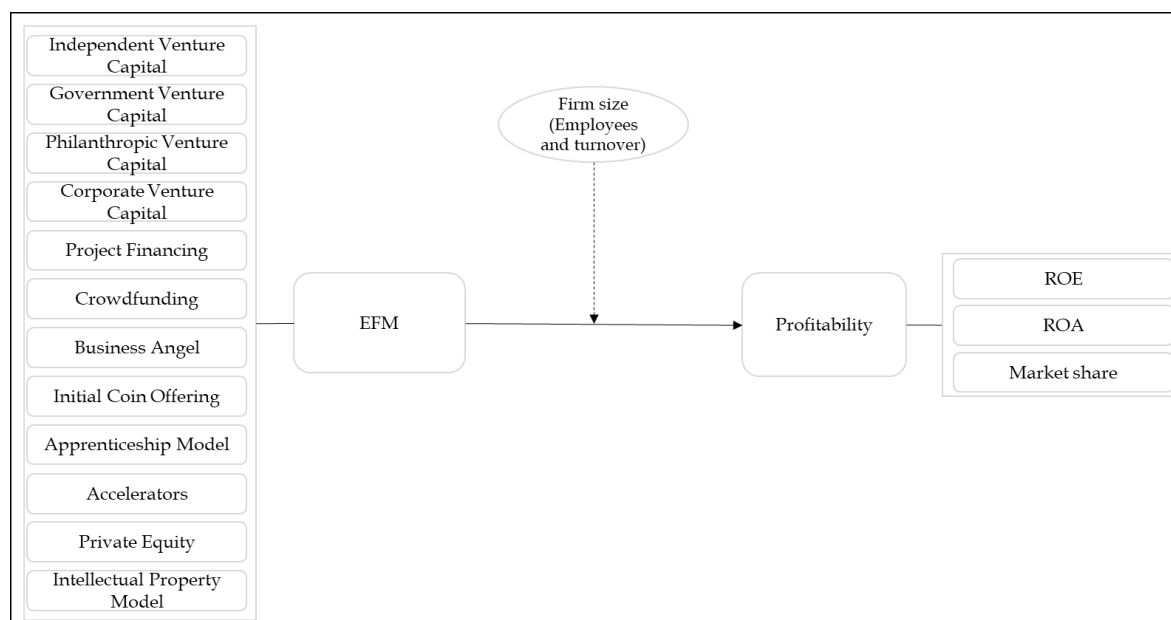
### **3.6.3 Firm Size as a Moderator between Entrepreneurial Finance Models and Profitability**

For several years, firms have been classed into different sizes, with key definitions and categorizations dedicated to SMEs. It is imperative in this research to assess the moderating role firm size has on profitability. There are no standard and generally used categorization of SMEs (Kijkasiwat & Phuensane, 2020). SMEs are defined and categorized differently across different countries and institutions. This research focuses on a group of SMEs (BG SMEs) and their firm size has been defined using the SMEDAN definition of SMEs.

Figure 3.11 models the moderating effect of the size of a firm on the relationship between EFM and BG SME profitability. The literature review chapter, studies on the impact of some EFMs on firms have been conducted in different environmental ecosystems, with positive, neutral, or negative impacts. There are ideas shared that elucidate the need to infuse additional conditionalities that are key in the formation and functionality of firms and could alter performance (Dooley, et al., 2016). The firm size can affect certain aspects of a firm's ability to function using technology and innovation. Large-sized companies can take on several innovative and capital-intensive activities, and they are in a better position to have access to external finance (Kijkasiwat & Phuensane, 2020). Similarly, these large firms are more capable of obtaining innovative resources (Wang, et al., 2018). Links have been inferred between the size of a firm and the growth and development of firms. This invariably can give them a better chance at growth. Kijkasiwat & Phuensane (2020) formulated a model to determine the moderating impact of firm size on firm performance, also weighing the impact of financial capital. Their research examines 12,890 SMEs from 29 countries with SMEs having an employee size of between 5-99. Amal et al. (2012) lists

firm size and management competence as factors that have positive effects statistically on the financial performance of insurance firms in Jordan.

**Figure 3.11: The Relationship between Firm Size, EFM and Profitability**



*Sources: Created by the Researcher (Extract from the research framework)*

It can be deducted that the firm size could influence the relationship between variables. In typical SMEs, ownership and resource management of a firm will be in the control of an individual or a practical small group who decide on what happens (Spence, 2007). This can essentially pronounce the risk and opaque nature of the management system which EFMs could have to deal with.

The following hypotheses have been proposed for testing:

**H1g:** *Firm size positively moderates the impact of EFM on the ROE of BG SMEs.*

**H1h:** *Firm size positively moderates the impact of EFM on the ROA of BG SMEs.*

**H1i:** *Firm size positively moderates the impact of EFM on the market share of BG SMEs.*



This research hypothesizes that firm size has a moderating influence and positive significant impact on the relationship between crowdfunding, IVC, CVC, PhVC and BA and BG SME firms. Ewens et al. (2022) point out that IVCs and CVCs are able to enact and utilise strict contracts and covenants that deter irrational and opportunistic behaviours by firms. By dealing with the agency problem, the firms can better benefit from external financing the larger they become.

As informed by the literature, firm size plays a neutral role in the relationship between Bank finance, government grants, GVC, and Accelerators and BG SMEs' profitability. This suggests that the impact of these EFMs on BG SMEs' profitability is not influenced by the size of the firms. In other words, whether a BG SME is small, medium, or large, these factors do not seem to have a significant correlation with their profitability.

#### **3.6.4 Entrepreneurial Finance Models and Firm Structure**

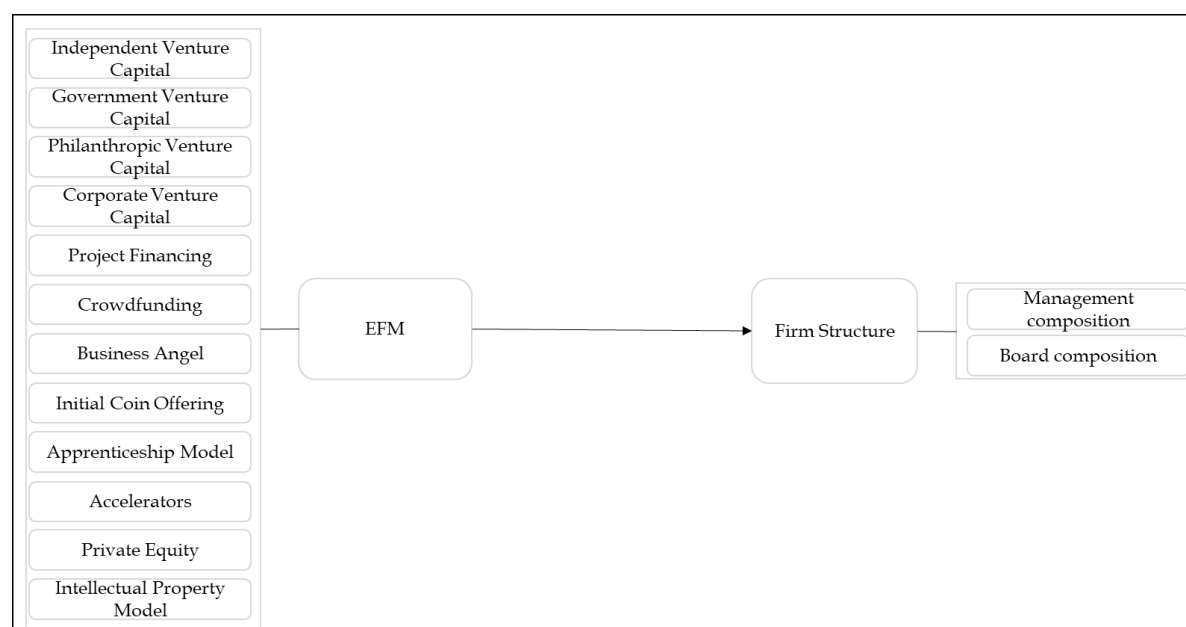
Firm structure in this research is reflected by two key elements – management composition and board composition. The firm structure is an important variable that can determine business outcomes. This research evaluates if management and board structures of BG SMEs are impacted because of the type of EFM they obtain.

Empirical evidence shows that some EFMs are known to make changes to the board and management composition. Research conducted by Hasan, et al. (2018) reports that venture capitals made appointments of their personnel of choice as directors to the board of companies. The research that focused on Standard & Poor's 1500 companies notes that about 30% of those companies had venture capitals' officers on the board. Amornsiripanitch, et al. (2019) research aligns with the claim that venture

capital firms impact on boards and management compositions, stating that managers and board members tend to be supplied by the financiers.

There are debates around the role a financier plays to the structure on the investee firm. Understanding the impact an EFM can have on a firm structure can be useful in addressing issues that have been raised in such debates. For example, Hasan, et al. (2018) discusses the expertise and knowledge venture capitals can bring to the company through board leadership roles. Their research points that there are significant differences between firms that their board have not be impacted by venture capitals and firms that have venture capitals on their board which sees the later perform better. A varying view projects the fear of entrepreneurs who are not willing to lose ownership of their business or who fear their business goals might change as a result of the management and board compositions intrusion by EFMs.

**Figure 3.12: Relationship between EFM and Firm Structure**



*Sources: Created by the Researcher (Extract from the research framework)*

Figure 3.12 illustrates the element of the research framework and the research aim to assess the relationship between EFM and firm structure. The research investigates how different EFMs impact on the outcome of BG SMEs through impacting on the firm structure. The hypothesis below was designed to address the specific element of the research framework.

***H2:*** *There is dependence of firm structure of BG SMEs on EFM*

***H2a:*** *There is dependence of management composition of BG SMEs on EFM.*

***H2b:*** *There is dependence of board composition of BG SMEs on EFM*

This research proposes that IVC and CVC would directly cause a change in the firm structure of BG SMEs. It suggests that BG SMEs that receive funding from IVC and CVC EFMs would experience a change in their management and board compositions. Amornsiripanitch, et al. (2019) and Hasan et al. (2018) in their research highlight that venture capitalists tend to recommend and supply members of management and the board to their investee firms. The process has been used to deal with information asymmetry, hazards and adverse selection, and all forms of principal-agent conflicts (Kato & Tsoka, 2020). This proposal implies that funding from IVC and CVC EFMs could lead to significant changes in how BG SMEs are managed and governed. Such changes would include alterations in the composition of the executive team and the board of directors.

This research expects that BA, PhVC, GVC, bank financing, government grant, accelerator, and crowdfunding would not cause a change in the firm structure of BG SMEs. In other words, this research anticipates that these EFMs will not cause a substantial transformation in management and board compositions of BG SMEs. This

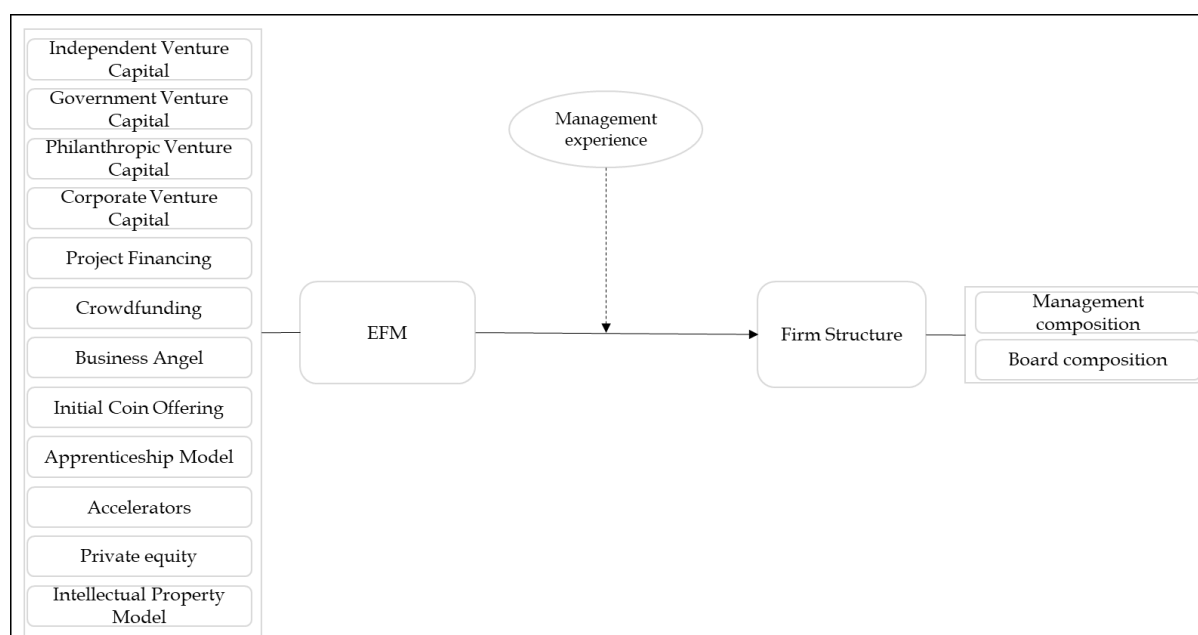
hypothesis is support by literature that highlights the operational models of these EFMs. There is indication that these EFMs do not have the capacity and expertise to institute monitoring and contractual mechanisms that cause changes to the management and board structures of BG SMEs.

The impact of the type of EFM on BG SMEs' firm structure is informed by financiers aiming to improve how firms' managers run their firms and minimising any conflicts of interest (Kato & Tsoka, 2020; Osuji & Odita, 2012). It identifies whether the entry of a type of EFM results in changes in the composition of the board of directors, such as new members or changes in the executive team, such as the appointment of new managers or the replacement of existing ones.

### **3.6.5 Management Experience as a Moderator between Entrepreneurial Finance Models and Firm Structure**

Following on from section 3.6.4, this analysis in this section includes the variation of the moderator. Positions in different research postulate reasons why some EFMs might be inclined to adjust a firm's structure. Commentaries have supported this position to protect investors against agency problems and information asymmetry (Kato & Tsoka, 2020). Furthermore, some research reveals the need to improve the expertise and knowledge resource of investee firms (Hasan, et al., 2018). The moderator scales the previous evaluation by understanding the level of the impact on firm structure as it relates to quality of managers in the firm at the time (see figure 3.13).

**Figure 3.13: The Relationship between Management Experience, EFM and Firm Structure**



*Sources: Created by the Researcher (Extract from the research framework)*

This thesis hereby proposes the following hypotheses:

**H2c:** *Management experience moderates the impact of EFM on the management composition of BG SMEs.*

**H2d:** *Management experience moderates the impact of EFM on the board composition of BG SMEs.*

Management experience as a moderator would directly influence a change in firm structure of BG SMEs that have received IVC and CVC. The assertion that the less experienced the management team of a BG SME is, the more likely the management and board compositions would be changed. Alnoor (2020) in their research observes that management capacity through the human capital dimension can determine a firm's performance and survivability. A skilled and experienced management team is likely to make better decisions, optimize resource allocation, and enhance overall

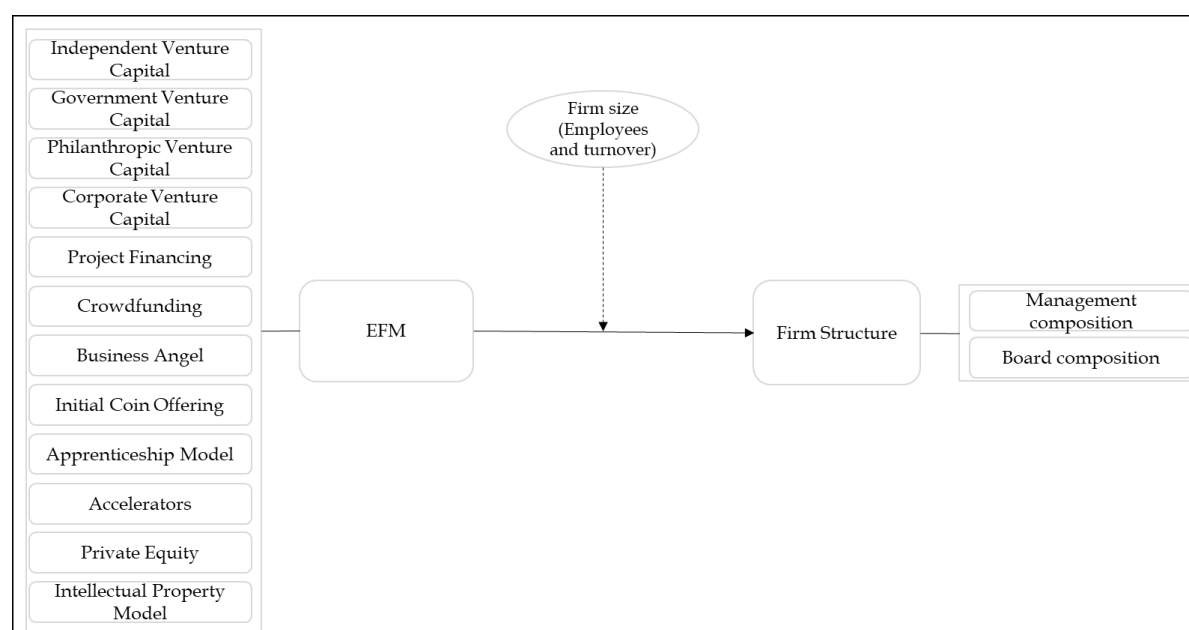
productivity. Therefore, for BG SMEs that have received IVC and CVC, it becomes essential to have a capable and experienced management team that can effectively leverage the provided resources to drive the firm's growth and productivity. Skilled managers can better adapt to the demands of the investment and align the firm's structure with the growth objectives set by the investors. It identifies whether the use of a type of EFM by a BG SME can result in changes in the composition of the board of directors, such as new members or changes in the executive team, such as the appointment of new managers or the replacement of existing ones when management experience as a moderating variable is introduced.

The moderating influence of management experience would have no significant positive influence on PhVC, GVC, crowdfunding, accelerator bank financing, government grant, and BAs forms of EFMs' interaction with BG SMEs. The operational models of these type of EFMs is pointed by previous literature are not designed and equipped to influence changes in the management and board compositions of the BG SMEs they provide finance. For example, comparing crowdfunding to IVC EFM, Mamonov & Malaga (2019) notes that IVCs take an active role in the firms they invest in, providing guidance, mentorship and engaging in strict monitoring of the activities of their investee firms unlike crowdfunding where the backers may not have direct access to the management of the business and could be seen as supporters and customers than as investors. On the other, for the accelerator EFM, by having BG SMEs in house for the duration of the time, the accelerators have no need to influence changes in the management and board compositions as they have a close view to the operations of the BG SME (Smith, 2020).

### 3.6.6 Firm Size as a Moderator between Entrepreneurial Finance Models and Firm Structure

Figure 3.14 shows the relationship between firm size, EFM and firm structure. Some researchers have reviewed firm size as a key variable in understanding EFMs. Hasan et al. (2018) evaluated the firm size of venture capitals in their research to ascertain the benefits to venture capital firms of having their preferred officers on the board of investee firms. Taking a different angle, Kijkasiwat & Phuensane (2020) evaluated the firm size of the investee firms. Their research measure small and medium size firms. Similarly, this research measures the moderating impact of firm size. The firm size of BG SMEs has been defined using the SMEDAN classifications of SMEs. This classification includes the number of employees in the firm and the annual turnover (SMEDAN, 2003).

**Figure 3.14: The Relationship between Firm Size, EFM and Firm Structure**



*Sources: Created by the Researcher (Extract from the research framework)*

The following hypotheses to test the moderating influence of firm size on management and board structure are proposed:

**H2e:** *Firm size moderates the impact of EFM on the management composition of BG SMEs.*

**H2f:** *Firm size moderates the impact of EFM on the board composition of BG SMEs.*

Firm size moderates the relationship between EFMs and the firm structure of BG SMEs. This means that the impact of EFMs on the firm structure of BG SMEs depends on their size. This research suggests that the influence of firm size in the relationship of EFM and BG SME firm structure would depend on the type of EFM obtained.

The firm size of a BG SME would have no moderating influence and thus would not directly cause a change on the BG SME firm structure that obtained finance from PhVC, GVC, accelerator, crowdfunding, bank financing, government grant, and BAs. In other words, the size of the SME would not influence how these sources of financing affect the management and board compositions. The literature in this research points that these EFMs (PhVC, GVC, accelerator, crowdfunding, banks, GG and BAs) do not implore mechanisms to management the conflicts that exists directing in the interactions with the firm structure of their investee firms. Thus, this research does not expect to see any direct changes on the BG SME management and board compositions of any size caused by these type of EFMs.

Firm size would have a moderating influence on the relationship between IVCs and CVCs and BG SMEs, causing changes on BG SME firm structures that are smaller. The research proposes that the size of the BG SMEs would be influenced by how these sources of financing affect the management and board compositions.



The research suggests that IVCs and CVCs could potentially cause changes in the firm structures of smaller BG SMEs. This means that the way the SMEs are managed, and the composition of their boards may be affected by the type of external financing they receive. The research also hypothesizes that as BG SMEs become larger, they may be less likely to experience significant changes or influence in their management and board compositions due to the type of EFM they obtain. The agency theory highlights that there are difficulties that exists in the interactions between the principal and the agent (Gornall & Strebulaev, 2022). To deal with these challenges, EFMs such as IVC and CVC use strict contractual documents and covenants to deal with information asymmetry, insufficient collateral, and moral hazard. Their (IVC and CVC) operating models are designed to play active roles in their investee firms which could be reorganising the management board structures of BG SMEs.

Overall, the research suggests that the type of financing received may have varying effects on the management and board structures of BG SMEs, and these effects may be influenced by the size of the BG SMEs. As BG SMEs grow larger, the impact of the EFM on their management and board compositions may become less pronounced.

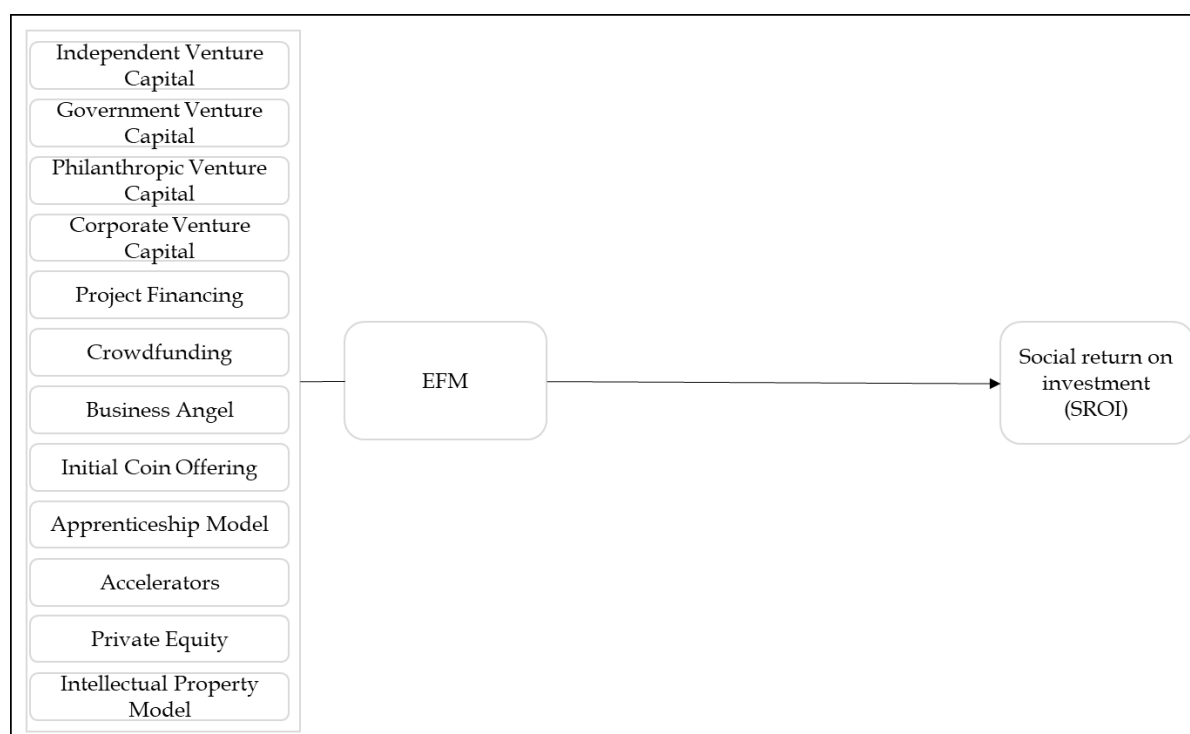
### **3.6.7 Entrepreneurial Finance Models and SROI**

Firms are usually under pressure to generate financial returns and justify their use of resources (Nielsen, et al., 2021). This applies to resources that are utilised for social impacts. The use of SROI has been proposed to help firms and EFMs calculate returns on social investments. The SROI framework is used to ascertain the efficiency of resources deployed in social impact activities by weighing it against the beneficial values created (Gosselin, et al., 2020). There is an increasing availability of social impact investing, where EFMs are providing funding to SMEs and start-ups with

specific social objectives, however, there are reports that show that the demand for these types of financing options is significantly low (Phillips & Johnson, 2019).

Figure 3.15 depicts the model that this research uses to understand the relationship between EFMs and SROI. The measure considers a part of Banke-Thomas et al. (2015) suggestion to use a before-and-after comparison. The model is designed to be objective by measuring the impact of EFM post-access to one or more EFMs.

**Figure 3.15: Relationship between EFM and SROI**



*Sources: Created by the Researcher (Extract from the research framework)*

Hypotheses H3 have been proposed to test the impact of EFMs on SROI.

**H3:** *There is positive dependence between the type of EFM obtained and the social return of investment (SROI) performance of BG SMEs.*

There is an increasing need to understand the efficient management of resources and the social impacts of activities of firms (Gosselin, et al., 2020). Firms with social impact objectives tend to seek finance from specialised EFMs that focus on SROI. Phillips & Johnson (2019) note that the demand for this type of finance is low despite the huge potential for firms.

This research proposes that PhVC, government grants, and crowdfunding would have a significant positive impact on BG SMEs' SROI. These EFMs are designed to provide funding that create and improve social impacts and directed to companies with social objectives. According to Block et al. (2018) these EFMs expect in return for their investment, their social goals are met thus leading to SROI.

On the other hand, IVC, CVC, GVC, bank financing, BAs, and accelerators are suggested to have a neutral impact on the SROI of BG SMEs. These EFMs would play a neutral role in BG SMEs SROI. These type of EFMs according to Block et al. (2018) are more focused on financial returns and are not actively seeking to achieve social impact goals.

It suggests that certain types of specialized EFMs would be more aligned with social impact objectives, while other mainstream EFMs may not contribute significantly to SROI for these BG SMEs.

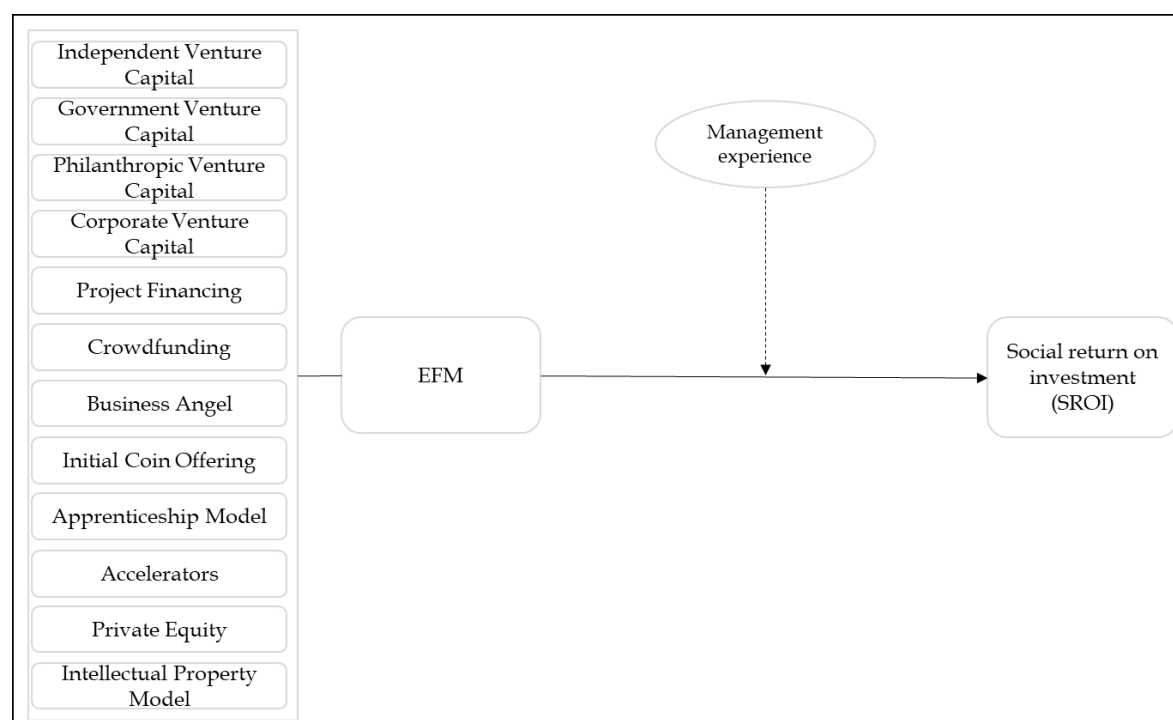
### **3.6.8 Management Experience as a Moderator between Entrepreneurial Finance Models and SROI**

The relationship between management experience, EFM and SROI is shown in figure 3.16. The goal of this analysis is to investigate the impact of the different EFMs on the SROI of BG SMEs and the moderating influence of management experience. Studies in entrepreneurial finance have assessed the effect management capacity has on the

performance and outcome of firms (Hussain, et al., 2022; Presutti & Odorici, 2019). Management experience has been surveyed different forms including as management experience (Alharbi, et al., 2018), entrepreneurial competencies (Hussain, et al., 2022), entrepreneur abilities (Diabate, et al., 2019) and entrepreneurial experience (Presutti & Odorici, 2019). The underlying idea in the evaluation of the management/entrepreneurial holds that the experiences and/or attributes of the manager/entrepreneur are required to sustain and grow the business venture (Hussain, et al., 2022). In addition, the management experience according to theorist highlights the level of expertise the manager has in managing scarce resources in a competitive environment. This builds on the human capital theory that acknowledges all learnings, attributes of an individual that enables them to create economic value (Garibaldi, 2006). Dar & Mishra (2019) put this simply as experience, skills, and talent. In this case, this is assessed as a moderating influence on the performance and outcome of BG SMEs.

Some research have shown that a substantial level of experience of SME management can have a positive effect on their ability to obtain EFM (Mahmud & Hilmi, 2014). Similarly, Sabah (2016) and Saleh (2016) finds a link between management experience and firm performance. Research conducted by Hussain et al. (2022) highlights a different result of the moderating influence of management experience or entrepreneurial competencies. Their research reveals that there is no significant influence of entrepreneurial competencies on performance of manufacturing SMEs.

**Figure 3.16: The Relationship between Management Experience, EFM and SROI**



*Sources: Created by the Researcher (Extract from the research framework)*

Management experience is an essential variable to understand in measuring firm performance and outcome (Alharbi, et al., 2018). It could be inferred from multiple research projects that an evaluation of the experiences and capacities of managers and entrepreneurs the better firms can perform (Ammari, 2015).

The hypothesis below is proposed to measure the relationship between management experience, EFM and SROI of BG SMEs.

**H3a:** *Management experience positively moderates the impact of EFM on the SROI of BG SMEs.*

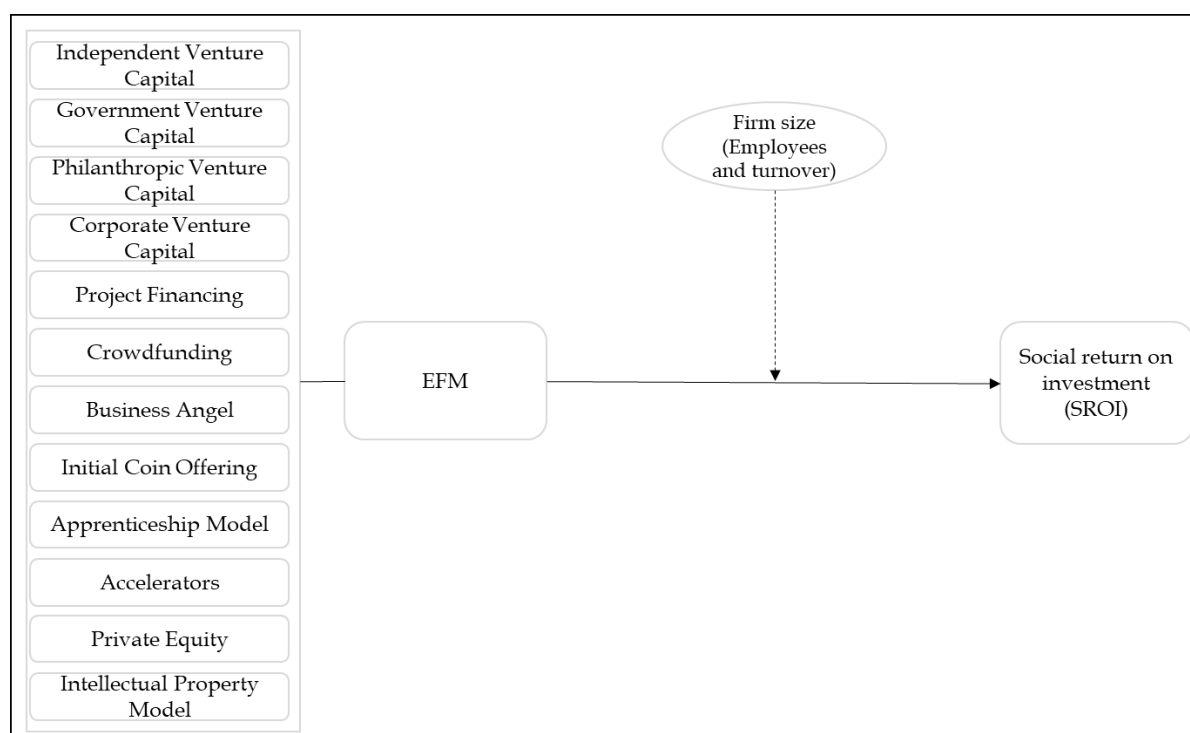
Management experience as a moderator would significantly positively influence the SROI of BG SMEs that have received PhVC. Invariably, the more experienced the management team of a BG SME is, the better the SROI performance of BG SMEs.

### **3.6.9 Firm Size as a Moderator between Entrepreneurial Finance Models and SROI**

Firm size could play an influencing role in firms' ability to obtain EFM and in the possible outcome and performance of firms. For example, BG SMEs are less likely to be able to obtain bank loans than large firms; instead, they rely on internal funds, or cash from friends and family, to launch and initially run their enterprises. The International Finance Corporation (IFC) estimates that 65 million firms, or 40% of formal micro, small and medium enterprises (MSMEs) in developing countries, have a financing need of \$5.2 trillion every year, which is equivalent to 1.4 times the current level of the global MSME lending. East Asia and Pacific accounts for the largest share (46%) of the total global finance gap and is followed by Latin America and the Caribbean (23%) and Europe and Central Asia (15%). The gap volume varies considerably region to region. Latin America and the Caribbean and the Middle East and North Africa regions, in particular, have the highest proportion of the finance gap compared to potential demand, measured at 87% and 88%, respectively. About half of formal SMEs don't have access to formal credit. The financing gap is even larger when micro and informal enterprises are taken into account. – World Bank, 2015.

In the previous chapters, this research has identified various financing options that are available to BG SMEs and SMEs. The thesis highlighted the changing business models that include a shift for some business models from strict financial return of investments to social returns. This has instigated the need to investigate in this research the relationship of EFMs and SROI with the firm size as moderating influence (see figure 3.17).

**Figure 3.17: The Relationship between Firm Size, EFM and SROI**



*Sources: Created by the Researcher (Extract from the research framework)*

Below, H3b is proposed as a test to show the firm size moderating impact of EFMs on the SROI of BG SMEs.

**H3b:** *Firm size positively moderates the impact of EFM on the SROI of BG SMEs.*

Firm size moderates the relationship between EFMs and the SROI of BG SMEs.

The firm size of a BG SME would have no moderating influence and thus have no significant impact on the BG SME SROI that obtained finance from IVC, CVC, GVC, accelerator, IPS, ICOs, PE, bank financing, and BAs. These EFMs would play a neutral role in BG SMEs SROI notwithstanding the firm size. These type of EFMs according to Block et al. (2018) are more focused on financial returns and are not actively seeking to achieve social impact goals.

Firm size would have a moderating influence on the relationship between PhVC, government grant, private/foundation grants and crowdfunding, and BG SMEs, causing a significantly positive impact on BG SME SROI that are bigger. This suggests that these types of EFMs are expected to have a notable positive effect on the Social Return on Investment of BG SMEs as they firm size increases. The literature supports this hypothesis and indicates that these types of EFM (PhVC, GG, private/foundation grants and crowdfunding) aim to finance social impact activities and seek to measure their investments based on the SROI.

### **3.7 Conclusions**

Some literature reviewed highlighted how fundamental the composition of management and board teams of firms are to the growth and success of firms. EFMs such as IVC and PE are keen to see a management and board team they can work with, viewing that as being more relevant to their decision making than other business characteristics.

Globalization and the internet have been attributed as drivers of the growth of EFM in Nigeria. Several businesses have taken advantage of the available opportunities by reaching a wider customer base through the internet, and the integration of global markets.

The research examines the literature to understand how important the decision of what type of EFM to utilize has on the performance and outcome of BG SMEs and SMEs in general. The EFMs identified in this chapter include IVC, CVC, accelerators, IPS, PhVC, GVC, banks, crowdfunding, ICOs, private/foundation grants, BAs, private equity, and government grants.



The next chapter addresses the research methodology adopted in this research highlighting the approach used in the measure of performance and outcome of BG SMEs.

## Chapter 4: Research Design and Methodology

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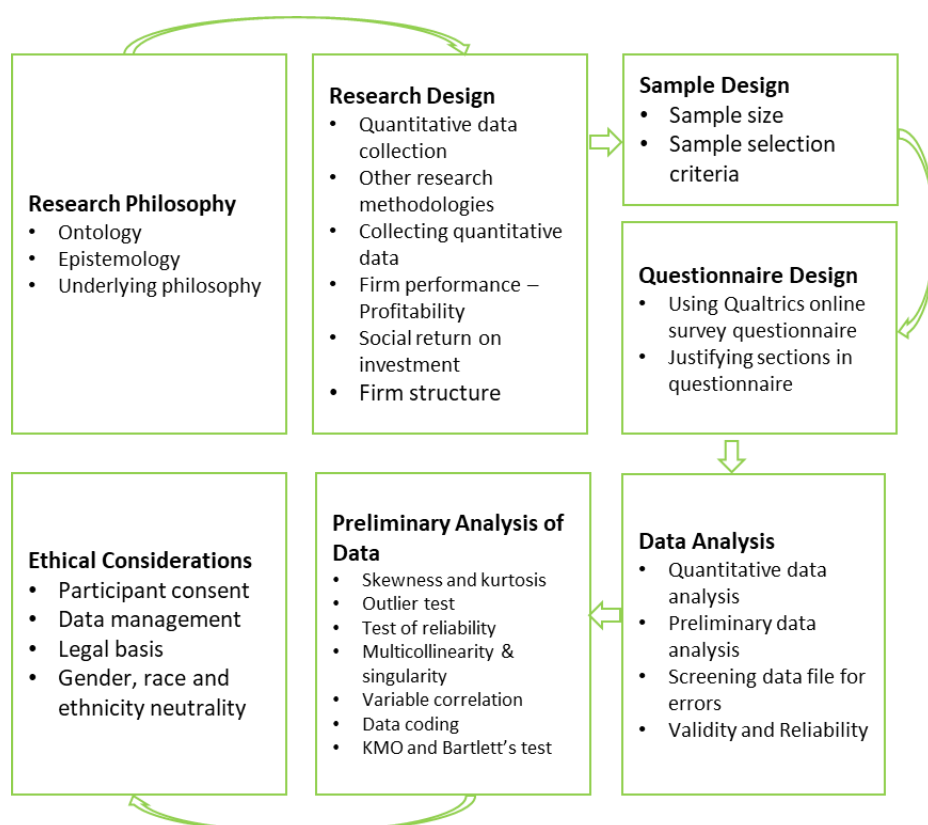
### 4.1 Introduction

The objective of this research is **to evaluate the relationship between entrepreneurial finance models and BG SMEs in Nigeria to understand the impact of the different entrepreneurial finance models on the outcome of the firms that have used them as a source of finance.** To understand the appropriate research methodology to use in research, this chapter begins by articulating the underlying philosophy.

This chapter of the study presents the positivist philosophy, which is the underpinning philosophy used, whilst reviewing other philosophies that have been used in other academic presentations in the field of entrepreneurial finance, for example, interpretivism, critical realism, and pragmatism. Gendron & Smith-Lacroix (2015) and McDonald et al. (2015) point out that more researchers in entrepreneurial finance have featured the positivist/objectivist approach.

The section goes on to review the research design; the methodology adopted in this research and the key data validation steps taken. This chapter has been mapped into seven (7) broad areas and has been discussed in the flow highlighted in figure 4.1 below.

**Figure 4.1: Graphic Illustration – Seven Broad Areas of Chapter 4**



*Source: Created by the Researcher*

## 4.2 Research Philosophy

### 4.2.1 Overview

This research took into consideration the assumptions and the nature of this research, the knowledge around ontology and epistemology in the research field. The research methodology of any research draws from a philosophical approach highlighting the way truth and knowledge in a subject area is created or found (Saunders et. al., 2015; Eriksson & Kovalainen, 2008). Ritchie et al. (2014) note that whilst the various approaches to conducting research works, there is no generally accepted single way of arriving at knowledge through research. Prasad & Prasad (2002) state that there are various underpinning philosophies and methodologies that exist and when used could reflect minor differences or hide differences in findings. The philosophy of this

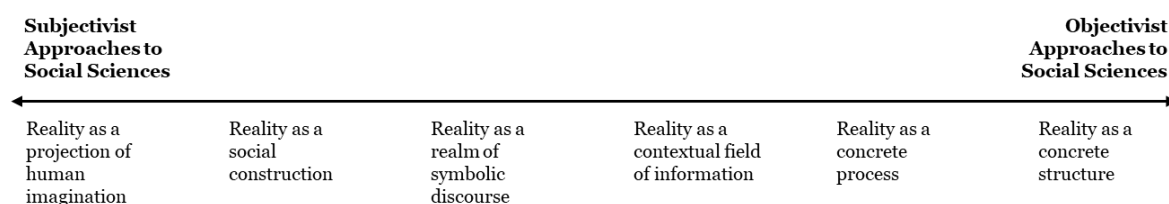
research positions the research to search for ‘truth’ in the impact of EFM on the outcome and performance of BG SMEs using positivist philosophical approach (Alharahsheh & Pius, 2020). At the extreme right of the ontological and epistemological gauge is the setting of research in an objective way to highlight the existence of reality as a concrete structure, that can be revealed using laid down replicable and bias free processes (see figure 4.2) (Morgan & Smircich, 1980).

#### 4.2.2 Ontology

Ontology has been described as the researcher’s perception of reality and the assumptions held on the objective and/or subjectivity of such reality (Johnson & Duberley, 2000). Morgan & Smircich (1980) and Burrell & Morgan (1979) explains that the nature of being is a matter of choice and adequacy of various methods in obtaining an understanding of the nature of being.

Figure 4.2 highlights the ontological gauge expressed by Morgan & Smircich (1980) to discuss the levels of assumption of reality. At both extremes lie the dominant positions largely debated by most experts as stated in this work.

**Figure 4.2: Ontological Gauge**



Source: Morgan & Smircich (1980)

Ontology expresses an assumption of the nature of ‘being’ and understanding of the substance of their existence and reality (Morrow & Brown, 1994). Morrow & Brown

(1994) state that there are two approaches to understanding social and organizational reality – objectivism and constructivism. Morgan & Smircich (1980) explain that the reality of phenomena under the objectivist approach exists independent of human consciousness or individuals' actions. However, the constructive approach disagrees with the objectivist position by arguing that the external reality that exists out there is a construct of the actors and simply a formation of individual minds and cognition.

The debate regarding the nature of 'being' or the assumption of reality in entrepreneurial finance is a bit blurry this research observes. That truth exists already and needs only to be discovered a philosophical position of objectivist assumes that individuals' minds cannot impact on the truth because the truth exist already. However, it is observed that what constitutes the truth in Fogel's research are factors created and altered daily by individuals. Whether interest rates or inflation rates or credit rates, they are all creations of the human mind, altered and driven by mood as pointed by PUC (2014). Through the advancement of technology and the methods of the natural sciences, these factors can now be computed and quantified free of subjective bias.

While approaching the truth from a constructionist point, objectivists worry about bias and the possibility of replicability. A review of several entrepreneurial finance research papers that are of the philosophical believe that truth is a social construct of the individual mind, they tend to justify their approach to obtaining truth by the sincerity of the methods employed. Whether interviews or focus groups, they show that the research questions do not mislead and are unbiased.

Miller & Lin (2010) point out that the ontological assumption guides the epistemological process.

### 4.2.3 Epistemology

Epistemology asks questions of the researcher's assumptions of the nature of knowledge and the process by which the researcher comes about what acceptable knowledge is (Morrow & Brown 1994). Johnson & Duberley (2000) add that epistemology helps researchers justify knowledge and their beliefs of what is truth, thus defining the methods of arriving at knowledge.

Watson (2011) agrees that as individuals, our daily conception of phenomena can impact the positions we take on ontology and epistemology. This can also be said that our position on ontology and epistemology could also influence the way we perceive a phenomenon and the truth we hold about such a phenomenon.

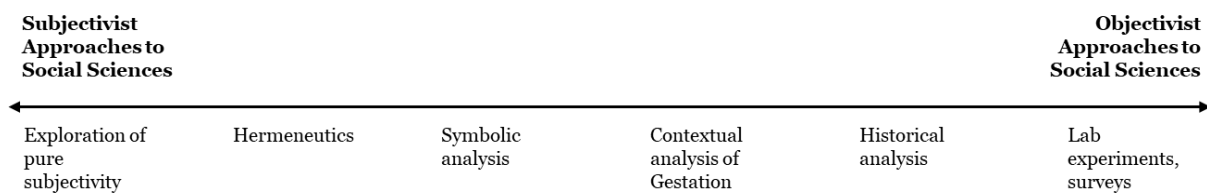
There are two significant approaches to deciding what acceptable knowledge is - positivism and interpretivism (Morgan & Smircich, 1980). However, Lincoln & Guba (2000) and Prasad & Prasad (2002) express that there is a range of philosophies and methodologies to use including neo-empiricist (Brown & Rich, 2014), postmodernism (Ryan, et al., 2002), critical realism (Zachariadis, et al., 2013; Mir & Watson, 2001), pragmatism (Swidler, 2014), transcendental idealism (Ryan et al., 2002), social constructionism (Cunliffe, 2001; Berger & Luckmann, 1966), coherentism and conformism (Miller & Lin, 2010)

Positivists are of the view that only knowledge acquired empirically or with the senses (look, hear, smell and taste) can constitute valid knowledge. This approach advocates for the application of the objectivist methodology of the natural sciences.

Interpretivism on the other hand believes that the knowledge process is subjective to the individual and cannot be restricted to strict methodological processes of the natural sciences (Morrow & Brown, 1994). Marschan-Piekkari & Welch (2004)

mentions that investigating social matters can benefit from using various methods that fit the phenomena under study or to understanding the dynamic human behaviour. The world is understood from the individual's perception rather than observing the causal effects of external factors. Figure 4.3 below highlights a series of approaches between pure subjectivity and pure empirical/objectivity.

**Figure 4.3: Epistemological Gauge**



*Source: Morgan & Smircich (1980)*

Some researchers postulate that in addition to positivism and interpretivism, there are three additional key research philosophies – realism, postmodernism and pragmatism (Saunders et al., 2015; Saunders et al., 2009). These research philosophies can be compared with each other under four significant factors that highlight their nature. The key areas of comparison include the nature of reality or being (ontology), what constitutes acceptable knowledge (epistemology), role of values (axiology and the typical method they use (see table 4.1). Postmodernism which was not included in the table is discussed in detail below alongside ethnographic (Watson, 2011), and transcendental idealism (Ryan et al.; 2002).

**Table 4.1: Features of the Research Philosophies**

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
<b>Positivism</b>			
Real, external, independent true reality (universalism) One (things) Ordered	Scientific method and measurable facts Granular generalisations explanation and prediction as contribution	Observable Law-like Numbers Causal independent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
<b>Interpretivism</b>			
Complex, rich through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically inductive. Small samples, indepth investigations, qualitative methods of analysis, but a range of data can be interpreted
<b>Critical realism</b>			
Stratified/layered (the empirical, the actual and the real) External, independent Intransient Objective structures Causal mechanisms	Epistemological relativism Knowledge historically situated and transient Facts are social constructions Historical causal explanation as contribution	Value-laden research Researcher acknowledges bias by world views, cultural experience and upbringing Researcher tries to minimise bias and errors Researcher is as objective as possible	Retroductive, in-depth historically situated analysis of pre-existing structures and emerging agency. Range of methods and data types to fit subject matter
<b>Pragmatism</b>			
Complex, rich, external 'Reality' is the practical consequences of ideas Flux of processes, experiences and practices	Practical meaning of knowledge in specific contexts 'True' theories and knowledge are those that enable successful action Focus on problems, practices and relevance Problem solving and informed future practice as contribution	Value-driven research Researcher initiated and sustained by researcher's doubts and beliefs Researcher reflexive	Following research problem and research question Range of methods: mixed, multiple, qualitative, quantitative, action research Emphasis on practical solutions and outcomes

Source: Saunders et al. (2015) and Saunders et al. (2009)

Proponents of normal science are of the understanding that knowledge can only be arrived at using observable processes and empirical data. Researchers in this paradigm do not believe the position of interpretivists. They argue against the idea that individuals and actors can impact on reality and treat individuals as objects that are influenced by external factors. They propose that knowledge reached through mixed methods are invalid, seeing that the results are arrived at by the subjective expressions



of individuals. As shown in the table above, positivists seek one true reality that is independent and value-free.

A contrasting view to epistemology is held by ethnographic researchers who argue that certain phenomena like culture cannot be studied from afar by just observing or interviewing objects or participants. They believe that issues such as culture can only be investigated by experiential learning or participation.

Ethnographic research in entrepreneurial finance is very unpopular as some academics argue that it raises misconceptions in outcomes produced (Hammersley, 2018). The key processes in obtaining truth have been through positivist and interpretivist perceptions or a mixture of both, but not through directly interacting with the participants in their environment. This is evident from all research works by prominent authors in the field such as Fogel (2001); Zacharakis, Shepherd, & Coombs (2003); Denis (2004); Cumming (2007); Fairchild (2011) and Giordani (2015). Some factors like region, religion or functionality have been treated by interpretivist as individualistic. Onishi (2015) specifically studied a part of entrepreneurial finance models from an agency point of view. Others such as Grégoire, et al. (2011) assessed the subject matter based on education and experience of the individuals (entrepreneurs or managers), which they termed cognitive bias.

Though Miller & Lin (2010) explained epistemology using pragmatism, coherentism and conformism approach, they basically express that the epistemological approach and environment affect the dynamics of knowledge. Miller & Lin (2010) in their research tends to throw more light on how a chosen epistemology criteria impacts on organisational learning processes.

Interpretivism is socially constructed and builds on four shared beliefs (Lee, et al., 1997). These beliefs include firstly, that the phenomena exist in a 'life world', which are influenced by individuals (Lee, et al., 1997). Secondly, that researchers play active roles in the knowledge acquiring journey inevitably as observers. Thirdly, that translation of what is knowledge is iterative and finally what will be acceptable knowledge can be verifiable.

Transcendental idealism and postmodernism have also featured and have been used in the area of entrepreneurial finance to shade more light on how famous philosophers have treated the different methods of approaching truth. Both Philosophies infer an advancement in research that is not dependent on one method or ontological assumption but the need to adopt the most appropriate method in social research works.

### Transcendental Idealism

According to Ryan et al. (2002) Immanuel Kant made efforts to resolve the differences existing around positivist and interpretivist, and objectivism and constructivism by using transcendental idealism. Kant acknowledged the existence of an objective world, however, argued against observing discrete objects and producing absolute knowledge of such object is false (Ryan et al., 2002). Kant argues that knowledge could be formed rather by applying stipulated principles of causality, space and time.

In an individual bank loan process, the bank applies certain principles in deciding whether to approve a loan request or not. The bank subjects the applicant to the five (5) C's of credit – character, capital, capacity, condition and collateral. These are similar to Kant's principles. These dynamics have changed with artificial intelligence (AI) with the advancement of credit scoring platforms. These AI platforms still apply

specific principles through a computation of the individual's transactional behaviour (character) in the past. These platforms attempt to resolve the positivism and interpretivism dichotomy by fusing both processes to achieve the ultimate goal.

Despite an awareness by Kant that there is a reality out there waiting to be discovered, Kant still believed that reality is mentally constructed.

### Postmodernism

Saunders et al. (2015) discussed the concept of postmodernism philosophy in their work highlighting its accommodation of language and the power of relations. Jacques Derrida, a philosopher associated with postmodernist philosophy argued that there is no philosophical belief that ranks above the other, and that there does not exist an absolute approach or assumption for truth (Ryan et al., 2002). According to Ryan et al., (2002), Derrida claims that all theories that exists in the quest for knowledge are equally valuable.

The postmodernist philosophy tends to advance the modernist philosophy whilst also correcting the anomalies and limitations of the modernist approach (Ryan et al., 2002). Pena (2007) notes that methodologies have metamorphosed to fit the current generation and to take into account the advancements in research and technology.

Some researchers in finance have assessed various phenomena by observing or exploring them in specific locations, however, some have tried to extract more precisely the role of culture or religion in the outcome of events. Derrida debates that the idea of acceptable truth is a construct of linguistics within a culture. This is a post-structuralism philosophy, another philosophy that Derrida is associated with. This view is similar to Kant's view that truth is a mental construct of individuals (Ryan et

al., 2002). Pena (2007) highlights the importance of language equivalence, stating that meaning can be lost in translation, which could challenge the validity of the knowledge when translated.

### 4.3 Underlying Philosophy

While reviewing research papers in entrepreneurial finance, the research finds that researchers like Batjargal (2007) adopt interpretivism as the method in acquiring knowledge. While Luukkonen, et al. (2013) use an objectivist or positivist method. There is the debate that the selection of methods in approaching knowledge is influenced by Morgan & Smircich (1980) view that the nature of the phenomena influences researchers' choice of epistemology. However, we can observe that typically, the methods could be more influenced by their perception of the world. Both papers (Batjargal, 2007; Luukkonen, et al., 2013) seek to understand the impact, performance, and value addition of various entrepreneurial finance models. Luukkonen et al. (2013) paper reflects the assumption that reality is influenced by external factors and such knowledge can be comprehended empirically.

A similar paper by Buchner, et al. (2018) also tends to find answers to the impact of entrepreneurial finance models across borders by also using similar methods (Luukkonen, et al., 2013). Buchner et al., (2018) investigates this phenomenon, not taking into consideration Pena (2007) four dimensions (linguistic, functional, cultural, and metric equivalence). Batjargal (2007) thinks otherwise by conducting interviews with individuals within a social organization in China, weighing the language and ethics of the people to arrive at acceptable knowledge of the impact of these entrepreneurial finance models as perceived by the individuals and actors involved.

Interpretivists are conditioned by where they stand and what they see (Lamont & Swidler, 2014). By such views, positivists debate that with interpretivists, the knowledge gathering process is subjective and thus biased and cannot depict a valid reality that holds true universally (Lamont & Swidler, 2014).

We learn from Morgan & Smircich (1980); Batjargal (2007); Luukkonen, et al. (2013); Buchner, et al. (2018) and others that the epistemological approach chosen in finance to adequately arrive at valid knowledge could be a function of a researcher's perception of reality or the phenomena of finance and entrepreneurial finance.

#### **4.3.1 Positivism**

The underlying philosophy of this research is positivism, in which ontology & epistemology views the nature of reality from a position of objectivity (Ciray, 2013; Crotty, 1998). Our research follows the tenets of assessing observable reality within the EFM and BG SME concepts (Alharahsheh & Pius, 2020). This research has used concepts and theories to develop the research hypotheses that have been tested (Saunders et al., 2015). Positivism philosophy supports that knowledge and truth already exist and can be obtained free of bias by observing and experimenting (Rahi 2017). Some of the research instruments applicable in Positivist's research include, experiment, survey/questionnaire, use of archival analysis, historic data, and case studies (Rahi, 2017). There are researchers in the field who do not agree with the postulations and guidelines of positivism.

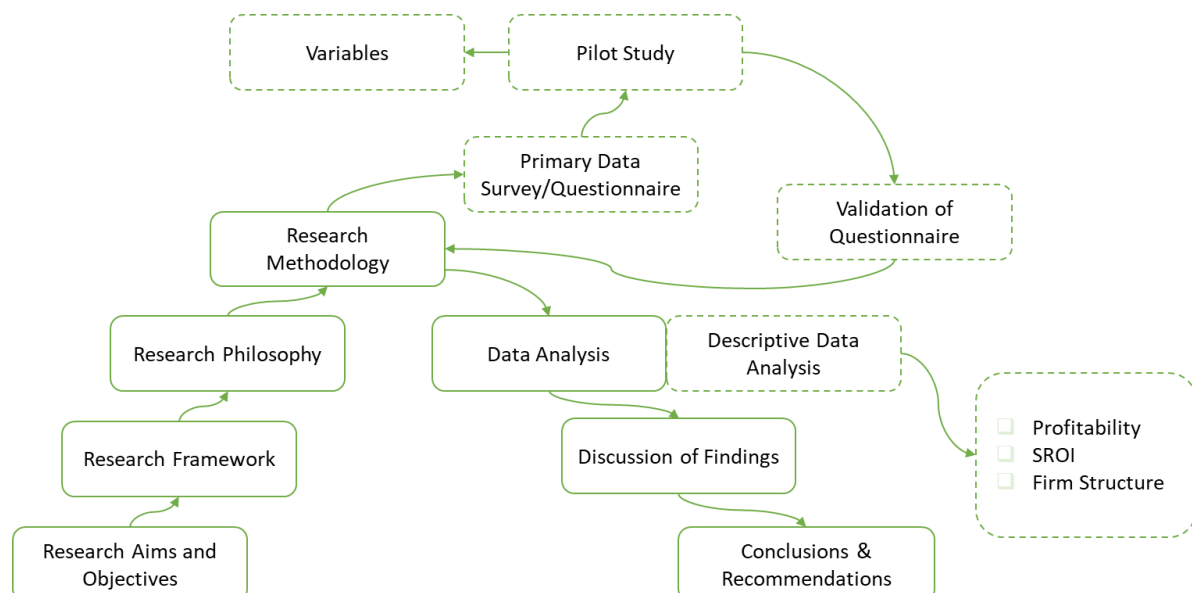
For example, Johnson & Duberley (2000) argue that the use of positivism in human social research tends to raise problems. Johnson & Duberley (2000) notes alongside Czerniawski (2004) that while positivism observes how an object 'behaves', they require the use of existing universal laws which can be flawed as 'objects' are subject

to the actions of internal logic and can change drifting away for such laws. There is the believe by researchers in the normal sciences that knowledge needs to pass through strict and observable processes. They argue against interpretivism and advocate for empirical research that uses empirical data that is free from subjectivity and bias (Alharahsheh & Pius, 2020).

#### 4.4 Research Design

This research was designed as a quantitative study to evaluate the impact of EFMs on the performance and outcome of BG SMEs. The research aim and objectives were stated, with the right research framework developed around a positivist philosophy and quantitative methodology. The research followed clear empirical processes to measure the profitability, SROI and firm structure outputs of BG SMEs. The research design flow is illustrated in figure 4.4 below.

**Figure 4.4: Research Design Flow**



*Source: Designed by the Researcher*

This research reviewed several research papers in entrepreneurial finance published in the last 20 years, observations show that different methodologies were adopted by different researchers to obtain or find answers to their identified research problem (see table 4.2). The different philosophical and methodological approaches adopted by researchers highlight the assertion that the researchers' choices could be driven by the researchers' perception of the nature of truth, and their believes of how to obtain knowledge.

#### **4.5 Research Method**

In the subject area of entrepreneurial finance, various research methodologies have been utilised. Research methodology relates to the epistemology of phenomena; it is the process by which we come about acceptable knowledge within a field of study (Morrow & Brown, 1994). Research papers have applied these three methodologies in the process of achieving their research objectives - qualitative, quantitative, and mixed method research as can be seen in table 4.2. The table below highlights some research papers in the field of entrepreneurial finance that have applied mixed method research (Bone et al., 2019; Munari & Toschi, 2015), qualitative methodology (Hendratmi et al., 2019) and quantitative methodology (Busch, 2018). These three different methodologies have different features and technical patterns to using them which makes them unique. These key features are tabled in appendix 8.1.

**Table 4.2: Example of Literature and Methodology**

<b>Author</b>	<b>Methodology</b>	<b>Data Collection Instrument</b>
Munari & Toschi (2015)	Mixed methodology	Database
Onishi (2015)	Mixed methodology	Interviews
Fogel (2001)	Mixed methodology	Mail surveys and telephone interviews
Buchner et al. (2018)	Quantitative	Secondary data (Database)
Luukkonen et al. (2013)	Quantitative	Questionnaire
Brander, et al. (2015)	Quantitative	Secondary data (Database)
Engberg, et al. (2021)	Quantitative	Secondary data (Database)
Hussain et al. (2006)	Quantitative	Telephone Questionnaire
Smolarski & Kut (2011)	Quantitative	Questionnaire survey
Biney (2018)	Quantitative	Questionnaire
Busch (2018)	Quantitative	Questionnaire and Secondary data
Bone, et al. (2019)	Mixed methodology	Focus group
García-Ochoa, et al. (2020)	Quantitative	Questionnaire
Hendratmi, et al. (2019)	Qualitative	Interviews
Havrylchyk & Mahdavi Ardekani (2020)	Quantitative	Secondary data (Database)
Peter, et al. (2018)	Mixed methodology	Questionnaire and interviews
Salerno (2019)	Quantitative	Secondary data (Database)

*Source: Designed by the researcher*

A researcher's choice of using one methodology and not the other could be based on varying factors considered. Ekanem (2007); Smircich & Morgan (1980) believe that one of the factors influencing a researcher's choice of methodology is the nature of phenomena being investigated. Daniel, et al. (2018) agree that the decision could be as a result of the nature of the research problem but could also simply be instigated by the researchers' familiarity of a method and a particular subject area. Saunders &



Bezzin (2015) think on their own part that some researchers have misconceptions about the methodologies, and they note that it is typical amongst student researchers.

Some researchers, for example Lamont & Swidler (2014) have advocated for a pluralistic research methodological environment that allows researchers to select a research methodology based purely on the research question and subject being investigated. They have referred to favouring one methodology over the other as *methodological tribalism*. Marschan-Piekkari & Welch (2004) mentions that investigating social matters can benefit from using various methods that fit the phenomena under study or to understanding the dynamic human behaviour. Notwithstanding, to avoid a misconception about the different methodologies mentioned by Saunders & Bezzin (2015), researchers must understand these methodologies and what they reflect when being used in a field of study.

Based on the positivist approach of this research, the researcher reviewed the different research methods adopted by other researchers in similar subject areas. Prominent research works, for example Buchner et al. (2018) and Luukkonen et al. (2013) adopted quantitative method. This method reflects the process of arriving at knowledge through related causes and effect by using pockets of variables that are studied in controlled environments to produce results (Stake, 1995). Buchner et al. (2018) collated data from CEPRES (Centre of Private Equity Research) using cash flow data from 6,529 VC investments that had exited through mergers & acquisitions, IPOs or liquidation (write-offs). They calculate the internal rate of returns (IRR), to ascertain the performance on cross-border VC investments. It is widely agreed that quantitative method is used majorly by positivist researchers, and they are of the view that only knowledge acquired empirically or with the senses (look, hear, smell and taste) can constitute valid knowledge (Su, 2018). This approach advocates for the

application of objective methodology of the natural sciences and emphasizes an objectivists approach. The approach of the quantitative method is different from the qualitative method approach. According to Williams (2007) qualitative research means discovery. It is a method that describes a research subject (Harwell, 2013), and a method that investigates real-life experiences in detail (Creswell, 1994). In research, qualitative method is classed with interpretivist thinkers who believe that the knowledge process is subjective and created by the perception of individual actors (Morrow & Brown, 1994). They are of the notion that the world is understood from the individual's perception rather than observing causal effects of external factors as is believed by positivists thinkers using quantitative methods.

There has been a long-standing debate between quantitative and qualitative methods of research. Positivist have stood against interpretivist, and their qualitative method, stating that their knowledge gathering process is highly subjective, breeds bias and cannot stand up against validity tests (Lamont & Swidler, 2014). On the other side of the debate, some interpretivist researchers are of the strong opinion that no research methodology is void of individual subjectivity, and takes into account language, culture and circumstances (Alharahsheh & Pius, 2020). They concur with Morrow & Brown (1994) who elucidate that the knowledge process cannot be restricted to strict technical methods process as is propagated by the natural sciences. Researchers and philosophers like Jacques Derrida believed that there is no single approach to knowledge (Ryan, et al., 2002), and that the phenomena being researched should be the guide to selecting a methodology (Lamont & Swidler, 2014). As a result of the feud some researchers thought about the arguments by both sides and reckoned that there might be an opportunity by combining the two different research methodology

together as a possibility to creating an even stronger research outcome (Chatterjee, 2013), and so the mixed method research.

Following from Cameron & Molina-Azorin (2011) mixed method research can be described as the combination of different research paradigms or multiple research strategies from the same paradigm to investigate phenomena in a bid to achieve the research goal. By the appropriate fusion of several data sets, the research is strengthened (Creswell & Plano Clark, 2011; Johnson & Turner, 2003), as it compensates for any lapses and weaknesses in each of the research methodologies (Quantitative and Qualitative) (Greene, 2007).

We learn from Buchner et al. (2018), Luukkonen et al. (2013), Batjargal (2007) and Morgan & Smircich (1980) that the methodological approach chosen in the field of finance to carry out research could be a function of the researchers' ontological viewpoint, or it could be based on the finance/entrepreneurial finance phenomena being studied.

The phenomena being evaluated in this research measures quantitative elements (profitability and SROI) that follow value-free and acceptable laws. In the light of that, and the justification of method used in similar research studies, this research adopts a *quantitative methodology*.

#### **4.5.1 Quantitative Data Collection**

The instrument of data collection adopted in this research is an analytical online survey questionnaire. Questionnaires are designed with specific written questions that focus on an interest area (Baxter & Jack, 2008), or subject area to obtain data from participants (Bird, 2009). The questionnaire allows for the research to be taken to the field to test the theory and logic around the subject area (Gill & Johnson, 2010).

Quantitative method of research advocates for the investigation of variables. Their relationship with each other, to arrive at an understanding that highlights the cause and the effect of each unit of variables (Basias & Pollalis, 2018). Quantitative methods address critics view on research process being able to be replicated and free from objective interpretations (Cuervo- Cazurra et al. 2017).

There are no databases in Nigeria that hold data or list BG SMEs in Nigeria. From the construct of Oladimeji & Eze (2017) that describes BG SMEs are a group of SMEs; the researcher distributed the questionnaires to SMEs. In designing the questionnaire, the research includes questions that highlight the criteria of BG SMEs as listed in section A 5.2.1. From a range of literature papers carefully reviewed and included in this research, there was need to take account of the dependent and the independent variables and all the possible interrelationships that could exist in the interactions of entrepreneurial finance models and BG SMEs within the environmental ecosystem of Nigeria.

#### **4.5.2 Other Research Methodologies**

An evaluation of several literature papers within the subject area shows some adopted a quantitative method, while some adopted a qualitative method, and we see that others employed a mixed method (see table 4.2 above). The research papers by Munari & Toschi (2015); Onishi (2015) and Fogel (2001) in the subject area adopted mixed method research. Though different research papers adopted different methodologies, the research identified the key elements in the research, pointing out the objective and subjective components of the research papers.

Mixed method research can be used to discuss the fundamental issues around the empirical and subjective measures of performance. The measurement of profit in this

research is purely empirical and will be reviewed using quantitative method. The SROI discusses different types of social changes and developments that though there was a financial input, there would not necessarily be a financial return (Leck, et al., 2016). The SROI could be expressed both quantitatively and qualitatively to assess empirical information and individual actor's experience (Leck, et al., 2016). It seeks to provide valuation for social, economic, technological, and environmental outcomes, in monetary terms (Harlock & Metcalf, 2016). To assess the SROI, a quantitative assessment of the impact of EFM on the outcome of SROI will be conducted.

This research uses the questionnaire as a tool to measure the changes that have occurred in the BG SMEs surveyed to understand how firms' structure evolved after accessing certain entrepreneurial finance models. Below we critically discuss the methodology and approach of some research journals in entrepreneurial finance.

In Munari & Toschi (2015) research assessing the impact of GVC funds in the UK, they adopt a quantitative approach. Munari & Toschi (2015) identifies from Venture Economics database firms that had received GVC funding between 1998 and 2007. Taking a different approach, Croce et al. (2018) while reviewing the impact of business angel financing on the performance of high-tech start-up firms collates data from firms listed in Crunchbase database. Croce et al. (2018) focused on firms that received first round funding which included BA finance before 2013. Munari & Toschi (2015) were also interested in ventures that received start-up/early-stage/seed investments. Bertoni et al. (2011) just like Munari & Toschi (2015) and Croce et al. (2018) utilised a timescale guide to select their sample group. Bertoni et al. (2011) selected their sample group for Italian new technology-based firms (NTBFs) from the 2004 RITA directory within a ten-year period (1994-2003). They highlight other key factors for selecting

the ventures, for example, the ventures must have been established in the 1980s or after and must have been run by the founders themselves up until after 2003.

We observe that journal papers reviewed had a similarity in their approach to selecting their sample size. In addition to profiling using a time-period, they selected the venture firms mostly from a single database. However, this is slightly different from the approach undertaken by Scarlata et al. (2017) in their research which assesses how human capital management factors affect the outcome of firms in PhVC firms and IVC or traditional VC firms. Based on Scarlata et al. (2017) research objectives, they first decided to sort firms into two categories: firms with dual organisational objectives and firms with singular organisational objectives. Unlike the other journal papers discussed above, Scarlata et al. (2017) utilised three different databases to select their sample size. They selected the sample size of firms categorised as PhVC through the US-based National Venture Capital Association and the European Venture Philanthropy Association (EVPA). While using VentureXpert database to identify the TVC/IVC firms. Again, a time-period was used as a controlling guide with firms being selected to have been established between 1993 and 2011. Onishi (2015) adopts a different methodological path from the rest by obtaining data using a qualitative mixed-mode method. Onishi (2015) combines the use of descriptive statistical data through surveys with questionnaires and interviews. Onishi (2015) argues that the use of interviews in obtaining data helps clarify issues as the subject of PhVC was a relatively new research area and little empirical research had been conducted in the area. Onishi observes that most available literature in the field were majorly subjective recounts and anecdotes, with little objective approach. To arrive at the sample size used, again Onishi (2015) approaches it differently from Munari & Toschi (2015), Bertoni et al. (2011) and Scarlata et al. (2017) who arrived at the sample by using

database platforms. Onishi (2015) employed scholarly and practitioner-oriented sources which included interviews with participants at the 2008 Social Capital Market Conference. Onishi (2015) also had industry expert interviews in their research. Data in this research will be obtained using online questionnaires with further helpful data to build on the literature (Munari & Toschi 2015).

#### **4.5.3 Collecting Quantitative Data**

The quantitative method has been chosen to deal with the complexities of entrepreneurial finance models which deal with controlled variables (management structure, business cycle stages, etc.) and emotional/subjective factors such as cognitive bias, behavioural factors etc. The quantitative data will be obtained on firms' profitability and SROI, while the qualitative data will focus on the outcome of firms' structure and explore the impact on SROI subjectively. The firms' profitability can be found on the financial statement of the firms (Gezici, et al., 2019; Watson, 2016). By studying the financial statement of BG SMEs, the research can obtain valuable financial information about the performance of the firms (VanAuken, et al., 2017). VanAuken, et al. (2017) add that a firm's decision, operations, and strategic goals are reflected on the financial statements so also is the information interpreted in the financial statement applied to the decisions of managers. Using the financial statement ensures that the required information is obtained from a universally accepted document and protected by the guidelines of the International Financial Reporting Standard (IFRS). The IFRS ensures that financial statements developed by member countries must follow the same procedures, thus standardising all financial statements of firms, institutions, governments of member countries (VanAuken, et al., 2017).

Nigeria has mandatorily adopted the IFRS standard of financial reporting (IFRS, 2017). Based on the aim of this research, which is to investigate the impact of EFMs

on the performance and outcome of BG SMEs in Nigeria, this research measures the outcome of the BG SMEs using three performance measurement metrics – Profit, Social Return on Investment (SROI) and Firm Structure. Business will be required to compute their financial statements using the IFRS financial guidelines. The IFRS standardized measurements help eliminate any inequalities or inaccuracies in the presentation of financial records of companies and countries (IFRS, 2017).

#### **4.6 Sample Design**

This research examines a unique type of SMEs (BG SMEs) that internationalise within the first 5 years of business operations. The research has been designed to focus on BG SMEs that obtained EFM within the first five years of their business life cycle. BG SMEs are a subset of SMEs that differ in their approach to internationalisation. These companies pursue an aggressive and rapid international expansion strategy from their inception or within a short time after their establishment. The core difference between and BG SME and a typical SME is simply in the BG SME internationalisation strategy. Since there are no BG SME data base, it was then paramount for this research to identify BG SMEs from an available data set of SMEs.

A research conducted by Hussain et al (2006) which compares the financing of SMEs in the UK and in China categorised vendors into three different life cycles. These lifecycles were identified as stages – (1) The start-up stage (2) The firms that are more than two years but less than five years, and (3) Firms that are older than five years. Hussain et al. (2006) uses the stratification as a control variable while collecting data (see table 4.3). It was argued that with Hussain et al. (2006) grouping of firms, it was more appropriate to benchmark the performance and risks of firms with more similar conditions and factors. Abe et al. (2015) supports this business life cycle categorization



using three similar stages that were adopted from the World bank's country classification based on income per-capita.

**Table 4.3: Business Cycle Categorisation**

Author	Category 1	Category 2	Category 3
Hussain et al. (2006)	The start-up stage	The firms that are more than two years but less than five years	Firms that are older than five years
Abe et al. (2015)	Nascent (<2 years)	Young (2-5 years)	Mature (5+ years)

Source: Abe et al. (2015 and Hussain et al. (2006)

This research adopts Abe et al. (2015) and Hussain et al. (2015) business cycle categorisation as a control factor for selecting BG SMEs. The research will be assessing the impact of entrepreneurial finance models on the outcome of BG SMEs that fall within the first (start-up stage) and second (over two years) business cycle stages. The other factor to be considered is that the relevant firms have their headquarters in a Nigeria and would have received finance from one of the entrepreneurial finance models being reviewed in this research within their first five years of operation.

The sample size that was evaluated in this research are BG SMEs that have obtained one or more of the entrepreneurial finance models discussed in this work. This SME list has been obtained from an SME and start-ups list of some SMEs held by the Bank of Industry (BOI) and the Small and Medium Scale Enterprise Agency Nigeria in Nigeria. There are currently no comprehensive databases that host BG SMEs; however, the research improvises using the descriptions of Dzikowski (2018) and Mort, et al. (2012) to achieve a valid data sample. Mort, et al. (2012) states that BG SMEs have emerged as high performing small and medium enterprises (SMEs) with the capacity and drive to rapidly internationalise. Despite Mort, et al. (2012) observation, there is a valid concern that there might not be many BG SMEs existing

in Nigeria, especially going by Oviatt & McDougall (1994) definition of BG firms. Oviatt & McDougall (1994) define BG firms as “business organisations that from inception, seek to derive significant competitive advantages from the use of resources and the sale of outputs in multiple countries”.

The research focuses on BG SMEs, which have been described as a category of high performing SMEs (Mort et al., 2012). PWC (2020) reports that there are 17 million SMEs in Nigeria. This research focuses on a particular type of SMEs referred to as "BG SMEs." This research uses the Nigerian SME data list collated from BOI and SMEDAN to identify the core population of BG SMEs which are SMEs that internationalise within the first 5 years of business operations (see appendix 4.2). The research is interested in SMEs that embark on internationalization activities within the first five years of their business operations. Early internationalization refers to the process by which companies expand their operations to foreign markets relatively soon after their establishment. The main difference between SMEs and Born-Global SMEs lies in their international orientation and expansion strategies. SMEs typically operate within their domestic market and grow gradually, while Born-Global SMEs have a global mindset from the start and aggressively expand into foreign markets early in their lifecycle. The researcher observes that there is no single database list of SMEs or BG SMEs in Nigeria. Since there is no single database that specifically lists SMEs or BG SMEs in Nigeria, the researcher aggregated a list of companies from SMEDAN and the BOI to form the sample for the study. A list was compiled, with 1100 SMEs identified. From the list of SMEs, it was impossible to identify which firms fit the BG SME description to have a systemized selection process, the BG SME criteria were developed and incorporated into the tool, of data collection (Luukkonen, et al., 2013). The researcher finds that Luukkonen et al. (2013) adopts a similar approach in arriving

at the population and sample size using both primary and secondary sources. Luukkonen et al. (2013) use various secondary data base & sources and included in its survey question to identify companies that had obtained VC funding. This method was useful as it allowed the research to identify BG SMEs that would not have normally been identified through searches, whilst also enhancing the research coverage of the population.

Questionnaire design have been chosen as the appropriate instrument of data collection under quantitative and positivist approach of the researcher (Pinsonneault & Kraemer, 1993). Questionnaires are also a necessary instrument to reach a large sample of the population (Pinsonneault & Kraemer, 1993). In order to meet the ethical requirements of research, this research will anonymise the firms' identity. This provides a protection of the firms from third parties being able to single out the performance of individual firms. Anonymising the data helps guard against conflicts and encourages an unbiased reporting.

This research notes that the sample design focuses on BG SMEs that are currently functioning which represents a robust sample, however, there could be a survival bias in the data set which could influence the estimates in some degree (Demirgüç-Kunt, et al., 2020). The bias arises because the data or information available is based on those who have "survived" a particular selection process while ignoring BG SMEs that did not survive. Including data from non-surviving BG SMEs could provide valuable insights, as it might highlight factors that contributed to their failure or closure. Nevertheless, this research chose to maintain its focus on currently functioning BG SMEs because its primary objective is to evaluate the impact of different types of EFMs on these firms' profitability, Social Return on Investment (SROI), and firm structure. By concentrating on this specific sample, the research aims to achieve its set objectives

and gain a better understanding of the role EFMs play in the success and structure of BG SMEs.

#### **4.6.1 Sample Size**

Through the cluster sampling described above which allows the researcher to derive its population from an aggregation of companies from SMEDAN and BOI (Rahi. 2017), the research arrives at a population of a size of 1100. Cluster sampling helps the research identify the sample size in this case as the actual BG SME population is unknown. The research population is heterogenous in nature, as it includes firms operating in different cities and sectors within Nigeria.

There are currently no databases that host BG SMEs and using the sampling techniques similar to Luukkonen et. al. (2013), the research identifies a sample size of 237 BG SMEs using questionnaires. The questions contained in section 1 of the questionnaire reflect the sample selection criteria highlighted below. The sample size included BG SMEs that had obtained one or more of the different EFMs and that had received such funding within the first five years of being established.

The researcher describes their sample size by the total of responses received that fit those criteria of BG SMEs in this case (Gill & Johnson, 2010). A confidence interval level was then applied as described in section 4.5 to arrive at the minimum sample size of firms (Sekaran, 2003).

#### **4.6.5 Sample Selection Criteria.**

The sample selection criteria have been developed to meet the research aim of evaluating the impact of EFMs on the performance and outcome of BG SMEs in Nigeria. The criteria outlined below were also informed by similar research done in

the subject area of BG SMEs (Abe et al., 2015; Luukkonen et. al., 2013; Knight & Cavusgil, 2004)

### **Criteria 1: Born-global SMEs**

The research focuses on BG SMEs and thus all firms in the sample size must meet the requirements of BG SMEs to be included in the sample size. These requirements include firms that have gone international; other through positioning, product, or service delivery to the other countries from the one they established in from inception to 5 years of being established. They also include firms that receive 30% or more of their total revenue from such international engagements/dealings.

### **Criteria 2: Headquartered in Nigeria**

The context of this research looks at BG SMEs that have their origin in Nigeria. As this research uses questionnaires to identify its sample size (Luukkonen et. al., 2013), a question was included in the questionnaire to detect firms that had their headquarters in Nigeria. The research ensured that all companies that were included in the sample size had their headquarters in Nigeria whilst being present in other countries.

### **Criteria 3: Received one Funding from One or More of the Entrepreneurial Finance Models**

This research has identified several entrepreneurial finance models including, different venture capital funding, crowdfunding, private equity, ICO, IPO, business angels, grants from governments, accelerator funding, banks and IPA. In addition to criteria 1 and 2, firms regarded as BG SMEs should have received one or more of the entrepreneurial finance models to be listed in the sample size. To identify if firms have received any of these entrepreneurial finances, firms have been asked in the

questionnaire if they had received any external funding and to select which of the external funding received. Respondents could input any additional finance they might have received which had not been listed on the online questionnaire.

#### **Criteria 4: Received an Entrepreneurial Finance Fund within the Firm's 1-5years Business Operations**

The final criteria used to select the sample size for this research was to control the period within which the firm would have received the external funding using Abe et al. (2015) and Hussain et. al (2006) business cycle categorization. Abe et al. (2015 and Hussain et al. (2006) alludes that firms can fit into different business cycles and these business cycles could affect the operations and activities of these businesses. They express that firms that are 0-2 years are in their start-up stage, and it has been seen that financiers believe them to be riskier. Businesses that are over years of age and less than five years could be seen as more experienced and thus react differently to a set of environmental ecosystems including knowledge transfer and application. Whereas firms in the business cycle of over five years are seen to be well experienced having survived the start-up and mid stages of the business cycle and gained vast knowledge in addressing environmental ecosystem factors. It was important for this research to control the time-period of obtaining finance as the review of different literature papers indicate that some entrepreneurial finance models are unwilling to provide finance for start-up firms. It is widely believed that most SMEs and start-ups do not have valuable asserts that can be used as collaterals, consequently, banks are unwilling to provide debt financing to such firms. Firms in the start-up stage and mid-stages are likely to have less cashflow history, thereby providing little or no historic data that could be used to assess the potential of such firms, this could make it difficult for entrepreneurial finance models like venture capitals to get involved with such firms.

Similarly, there are other paramount differences with the different business cycle stages that could affect the results. With more experience than the other stages of businesses, businesses over five years are businesses that have found their way around their market and are more likely to have built a network, a track record and bargaining platform based on previous transactions. That also could mean that they could have established trust. These are likely going to mean that the outcome of these firms who received external funding after five years of business operations would be different from firms in the other stages of the business cycle.

Taking all the points into account, it will be unfair to assess the performance of BG SMEs that received funding within 1-5 years of business operations with firms over five years old.

#### **4.7 Questionnaire Design**

To achieve the research aims of this research, an online questionnaire was designed and distributed to two SMEs in Nigeria. Questionnaire has been described as an objective approach to collecting data, which differs from subjective nature of interviews (Pinsonneault & Kraemer, 1993). Comparing both questionnaires & interviews, positivist researchers express that interview reflect the opinions, analytics and bias of participants, while questionnaires are more measurable and factual.

Questionnaires were distributed to the population of 1,100 registered SMEs identified through the SMEs' registered email addresses publicly available. From the population of 1,100 SMEs emailed, 524 responses were registered. Following that, the criteria of identifying a BG SME was applied based on the relevant filter section (see section 4.6.5). Using sample selection criteria described in section 4.6.5, 237 internationalized firms that had their headquarters in Nigeria were identified. To help identify the

minimum sample size, and to reduce the margin of error, the research applies the confidence interval calculation. Based on a 95% confidence level and a 5% margin of error, the ideal sample size should not be less than 146 (Sekaran, 2003). At the end of the filter process, a sample size of 237 BG SMEs was obtained. Using the confidence interval, the research can show the level of confidence in the results. The 95% confidence used expresses a confidence level that 19 times out of a total of 20 that our results will be within a  $\pm$  of our confidence level.

The questionnaire design went through five stages of design and structuring (see figure 4.5). The first stage required the identification of the target audience or sample of the research, this includes understanding the aim of the research. The first stage lies in the background and purpose of the research.

By understanding BG SMEs as our target sample and adding the aim of the research to assess the outcome of the target sample that have obtained entrepreneurial finance at this stage the research conceptualizes the required questions to answer the research goals/aims. At this stage, the research narrows the different variables, reviewing literature to highlight existing knowledge and facts in the subject area. The questions featured in the questionnaire were informed by previous research conducted by the Parkes et al. (2018) and the ECB & EU (2016; 2009) on access to entrepreneur funding.

Stage Three (3) of the questionnaire design involved presenting the variables and choosing the right data analysis formats, the right scales of measurement and the format of the questionnaire.

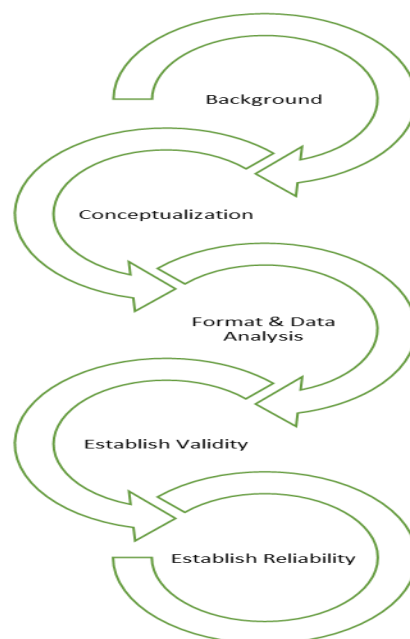
At the stage four (4) the researcher presented the questionnaire for a series of tests and expert evaluation. When the questionnaire had been formatted, they were presented to the researcher's academic supervisors. At this point, the supervisor



reviewed each question, ensuring that each question had been sufficiently justified, structured clearly, and could lead to valid answers. The supervisors looked at the readability, accessibility, and appropriateness for the field. Following the supervisors review, the researcher made corrections, sent it back for further review before engaging in pilot study.

A pilot test was run at stage five (5). The questionnaire readability, accessibility, field appropriateness and reliability were reassessed again. At the completion of the stage, the instrument was deemed ready and was distributed via emails to the identified participants. See diagram below of the five-stage design process.

**Figure 4.5: Five-stage Design Process**



*Source: Designed by the Researcher*

#### 4.7.1 Research Questionnaire

The questions in the questionnaire were adopted for research works conducted by the European Commission and European Central Bank on the access to finance of SMEs conducted in 2016 & 2009 (European Central Bank, 2016), and research conducted by Parkes et al. (2018) (see appendix 4.1). The questionnaire was designed with an introductory page that provides participants with a brief about the research and a link to the participant information sheet (PIS). The rest of the questionnaires were grouped into eight (8) sections (see table 4.4).

Following the information page is the consent pages where participants are required to provide their consent should the wish to participate in the questionnaire data collection.

The first section is the introductory section which contains 6 questions. The questions presented in this section are used to identify from the population the firms that meet the BG SME criteria identified in section A 5.3.1. The questions include when the company was established, the company headquarters, how many countries the company is present in through positioning, product & service delivery, when the company started international operations and if the company had obtained external finance.

The next section assesses the size of the company, focusing on three (3) elements of the employee size, sector, and the annual turnover.

*Section 4* is the management section and seeks to obtain data on the capacity and knowledge of the management team. The section contains eight (8) questions.

Eleven questions around funding were designed in section 5. These questions enquire on the company's use and access to external financing.

In *section 6* of the questionnaire, six (6) questions assess the firm and management structure.

The last two (2) sections – social or ethical objectives are company performance, contain 7 & 8 questions, respectively. Both sections investigate the performances of the companies around social objectives, social return on investment, profitability, market share and sales turnover.

The questionnaire design includes 5-point Likert scale questions (Palacios, et al., 2016). The range of the Likert scale is from 5 being 'strongly agree' to 1 being 'strongly disagree'. Matrix questions were adopted in obtaining data on the company performance.

**Table 4.4: Questionnaire Outline**

<b>S/N</b>	<b>Section Description</b>	<b>Number of Items</b>
1	Consent Page	5
2	Introduction	6
3	Company	3
4	Management	8
5	Entrepreneurial Finance Models	11
6	Firm Structure	6
7	Social Return on Investment	10
8	Company Performance	9

*Source: Table created by the Researcher*

Each section in the questionnaire has been designed to obtain the required data to address the research hypothesis, research questions and achieve the research objectives.

#### **4.7.2 Using Qualtrics Online Survey Questionnaire**

Using online surveys essentially enforces a unique demographic and participant group built around computers and technology (Andrews et. al., 2003). In online survey questions there is utmost need to consider how the questionnaires are designed, at what point they can be used, how they will be used (Andrews et. al., 2003), and the right way to get them across and back from respondents/participants. The use of electronic/online surveys has become increasingly popular and have been seen to be less expensive than posting questionnaires through the mail (Andrews et. al., 2003). Andrews et. al. (2003) advocate that online surveys are also time efficient, with the ability to send out thousands of questionnaires within a minute. They add that this is the same for obtaining responses and collating the data. Furthermore, the data obtained are easier to analyse when being inputted into statistical software such as statistical package for social sciences (SPSS) and STATA (Gill & Johnson, 2010).

Likewise, Gill & Johnson (2010) believe that with electronic questionnaires, the researchers can gain access to a research sample that could not have been reached through other survey means because of time, accessibility, and financial constraints. The above points could be right to a certain extent as alternative view argue that electronic surveys limit the research to obtain data only from a sample that has access to a computer and internet. The difficulties this will pose would vary across different regions. From this researcher's own experience in this research, the electronic survey helped in reaching 1100 SMEs whilst saving cost and time. Nonetheless, there were challenges faced with using the online questionnaire. The researcher observed that

several email addresses of companies that were made available were no longer valid for those companies and so that meant that the questionnaires shared did not reach all 1,100 firms in the sample population. To address this challenge, the researcher engaged in a telephone call campaign to follow up with questionnaires sent via email and to update email addresses that indicated *errors* in delivery.

Though in 2020 about 96million Nigerians have access to internet with 73% of access to internet frequently used on mobile internet enabled device, the country still largely engages in its business in traditional ways (Statista, 2021). The internet in Nigeria is still seen as a vulnerable space and susceptible to cybercrimes (Oni, et al., 2019; Ladokun & Ajayi, 2017). There is also the fear that the internet stores footprints and activities of internet users, this could cause participants to fear that the survey cannot be confidential and private even if stated as so. This fear could lead to a low response rate with most of the population deciding not to participate or complete the survey so as not to be reprised. Gill & Johnson (2010) note confidentiality and anonymity as a key challenge that crop up when discussing ethics in electronic surveys. Nosek et al. (2002) worry that the quality of the responses could be more easily compromised in electronic surveys by respondents. They explain that respondents can influence the quality of the data by completing the survey with false or incorrect answers, and by answering the questionnaire multiple times.

From a close review of all technicalities with using the Qualtrics system, the online survey questionnaire presents great opportunities to access a larger population size in a cost-effective and time-efficient manner. To further strengthen the and protect the integrity of the online survey process used in this research, the researched installed some measures within the process. Some measures include:

#### **4.7.2.1 Mobile and web accessibility**

The online survey questionnaire was designed to be mobile and web page friendly. This meant that respondents could easily access and complete the survey on any electronic device they had access to as long as it was internet-enabled.

#### **4.7.2.2 Multiple web browser accessibility**

Participants could use any web browser to complete the survey. For example, participants who use the Safari Apple browser, Google Chrome, Firefox, and Microsoft Edge could easily access the survey on Qualtrics.

The researcher conducted several tests to ascertain these web browsers work effectively on both the mobile apps and computer webpages.

#### **4.7.2.3 No multiple submissions**

The questionnaire also ensured that questionnaires could not be sent multiple times automatically. This was important to prevent against any undue influence on the quality of the data by a respondent or group of respondents.

#### **4.7.2.4 Confidential and Anonymous**

The Qualtrics electronic web page survey has features that enabled the researcher set up anonymous options that allowed participants complete the survey anonymously. The IP addresses and email addresses were not collected for the researcher thereby ensuring the privacy of participants and their companies were protected.

#### **4.7.2.5 Low Response Rate**

The Qualtrics analytics provided insights on the response rates of the different question design techniques and styles within research. This analytical report informed

the researcher about the attitude of respondents and the likelihood of having the questionnaire completed. This information helped the researcher design the questionnaire in a more engaging and logical manner. For example, the display of certain questions were controlled by the previous answers of the respondent and the relevance of the next questions to the respondents. The survey also allowed respondents save and return to the questionnaire at another time.

The questionnaire avoided the use of jargons. For example, the phrase entrepreneurial finance models replaced with external funding. The meaning of some questions and terms were also explained to avoid any ambiguity and misunderstanding. The researcher designed the questionnaire to allow anyone be able to participate without need of having prior knowledge of the subject area or any advanced technical know-how.

To test and put in context the questionnaire control measures, the researcher engaged in a pilot study. The pilot study helped the researcher understand how the control measures worked, how respondents responded to the overall questionnaire and what could be improved. As pointed out in section 4.7 of this thesis, the pilot study led to several improvements in the questionnaire structure, design, and outlook, amongst others.

#### **4.7.3 Justifying Sections in the Questionnaire**

The different sections and questions featured in the questionnaire perform different important roles as an instrument to guide the researcher achieve the research objections.

Figure 4.6 provides a snapshot of how the different sections link with the problem statement, the hypotheses, and the research objectives.

**Figure 4.6: Link to Hypotheses and Research objectives**



*Source: Created by the Researcher*

## \*Section 2 - Introduction

The category of firms described as BG SMEs have not been widely captured. There has not been much research done on BG SMEs (Oladimeji & Eze, 2017), and there is no database of BG SMEs in Nigeria. Born-global SMEs have been described as a category of SMEs that have rapidly gone international (Oladimeji & Eze, 2017). Taking from definitions of BG SMEs of Oladimeji & Eze (2017) and Knight & Cavusgil (2004) the researcher outlined a list that will be used in this research to identify BG SMEs. Section 1 focuses on identifying firms from the sample population that are BG SMEs. Luukkonen, et al. (2013) in their research used the questionnaire to arrive at their sample size. This has been a valuable strategy used by this research to arrive at a sample size.

### ***Question 1: When was your company established?***

Scholars such as Zubair, et al., 2020, Celebi & Hönig, 2019 and Hein, 2019 indicate in their research works that the economic conditions prior, during and after the financial



crisis of 2007/2008 differ from each and thus could impact on the performances of firms, and the availability of entrepreneurial funding. To reduce the differences in economic conditions experienced in different time periods as highlighted by Zubair et. al. (2020) this research is assessing only companies that were established not more than 10 years ago starting 2010.

***Question 2: where is the headquarters of the company?***

The context of the research is Nigeria. The research is aimed at investigating the outcome of BG SMEs in Nigeria. Question 2 assesses the company's origin to identify that the company being included in the sample size has its headquarters in Nigeria. This follows from various research within an environmental context. For example, Adeyinka et al. (2019) focused on the implication of development bank & finance on the growth and development of SMEs in Nigeria, Power & Raid (2020) on the impact of intellectual property types on the performance of business start-ups in the United States, Espenlaub et al. (2015) in venture capital exits in domestic and cross – border investments in North America, Guner (2016) on Turkish companies, Rusu & Toderascu (2016) on emerging economies, Satoglu (2017) on MINT economics, Deng et al. (2018) on initial coin offerings in China, Bertoni et al. (2015) on the patterns of venture capital investment in Europe, and Zhang et al. (2008) on the performance of government venture capital firms in China.

***Question 3: How many countries does your company operate in either through positioning, delivery or products, or services (including the country you are headquartered)?***

Oviatt & McDougall (1994) describes BG firms as firms seeking to derive a competitive advantage in multiple countries, from the application of resources and sale of outputs.

This question seeks to identify the company meets the criteria of BG SMEs which includes operating in multiple countries.

***Question 4: From the time of establishing the company, when during the life of the business did you begin to operate internationally?***

Knight & Cavusgil (2004) elude that BG SMEs venture internationally between 1-3 years of being established. The research adopts this description of BG SMEs and designed question 4 to ascertain that firms that operate in multiple countries indeed meet the BG SME criteria set out in this research as highlighted by Knight & Cavusgil (2004).

***Question 5: Did you obtain any external funding within the first 60 months (5years) of establishing the company?***

Firms have the option of financing their business operations using internally or externally generated funds. (ECB 2016; 2009), in debt or equity (Denis, 2004). This research focuses on the entrepreneurial finance models which are external finance sources. As part of the control variables, research sets a criterion using Hussain et al. (2006) stratification of SMEs into three life cycles. The research acknowledges that the performance of firms and risk experience are different at the different life cycles of the business. Hussain et al. (2006) expresses that the grouping of firms in each of the cycles, the start-up stage (1-2years) the firms above 2 years but less than 5 years and the firms that have existed for more than 5 years, help to measure, and benchmark the performance of these firms more appropriately.

Through the question, the research tends to identify & utilize data that obtained finance within the first two business cycles, thus between inception to maximum of 5 years.

***Question 6: Approximately, what percentage of your company's total turnover in 2019 is accounted for by your company's international operations?***

The research will be examining firms that meet the other criteria stipulated in addition to receiving 30% and over in its total turnover from their international operations (Knight & Cavusgil, 2004).

### **Section 3 - Company**

This section assesses the size of the company and the sector of operation.

Question 1 of this section enquires about the number of employees in the company, while Question 3 seeks to obtain information on the total turnover of the company in 2019. These two questions are the two key factors used in Nigeria to define the size of firms (CBN, 2003; SMEDAN, 2010). The CBN (2003) defines SMEs in Nigeria as firms as firms with an employee strength of less than 10 and up to 200 and that have an annual turnover of less than 1million naira and not more than 150million.

Question 2 identifies the main activities of the company. This data can provide valuable information to categorise the different BG SMEs in industries and sectors.

## **Section 4 - Management**

The management experiences and roles are gathered in section 3 of the questionnaire. The data provided in this section can reflect the understanding and capacity of the manager/respondent in managing their financial resources. It also highlights the managers professional and academic qualification, how that might affect their management of the company they run and assess on the performance of firms in relation to the capacity of the management team (Mohamad, et al., 2021).

The first and second questions in section 3 enquires from the respondent their current role and any previous roles within the company.

Question 3 seeks to understand the area of expertise of the respondent whilst question 4 in this section assesses how many years' experience the respondent has in the sector that the company operates in. This question evaluates the possibility of the respondent previously having a different industry knowledge to the company's current operations.

This could be possible indicators that could impact firm structure and firm performance.

The 6<sup>th</sup> question in section 3 ascertains the highest educational qualification of the respondent. The range of the options to choose from include senior school certificate, diploma, bachelor's degree or an equivalent, master's degree and an equivalent, PhD/DBA or an equivalent, and any professional qualifications.

The questionnaire using a Likert-scale type question in question 5 and 7 of this section, requests from respondents a response on if their knowledge of the industry they operate, and their academic qualification has helped them address the funding requirements of their company respectively. The Likert-scale ranges from 1-5 with 5

representing a strong agreement and 1 representing a strong disagreement to both questions respectively.

Finally, for the section, the age of the respondent was asked.

## **Section 5 – Funding- Entrepreneurial Finance Model**

Section fund addresses questions around the funding of the BG SMEs. The section contains 11 questions with some questions used to filter and identify firms that have obtained one or more entrepreneurial finance models.

The section starts by asking respondents which EFM they were familiar with. This question in addition tests the knowledge and possible existence of cognitive bias. The cognitive bias highlights in this context that managers would likely approach only EFMs they are aware of. For example, if a manage only knows the IVC EFM and has never heard about crowdfunding, when they have need for external finance, their cognitive bias will drive them to request funding from IVC.

Question 2, 4, 5, 6, 7, 8, 9, 10, and 11 of the funding section addresses a range of data that are useful to give descriptive insights into the broader concept of this research. The questions have been briefly highlighted in table 4.5.

Question 3 forms the core variable in section 5. The research aims at analysing the impact that EFMs have on the outcome of BG SMEs. This question enables the research to identify the EFMs that have been obtained by BG SMEs. The responses of this question are then measured to understand how each EFM has influenced how the BG SMEs have performed post obtaining the finance.

This question reads, *“Which one of the following external funding sources did your company obtain its first funding from?”*

**Table 4.5: Funding Section in Questionnaire**

Question No	Description of Question
Q2	Which of the following external funding options did your company apply to within the first 60 months (5 years) of the company's establishment?
Q4	What key factors did you consider when planning to obtain external funding?
Q5	Prior to accessing your first external funding, how did you fund the operations of the company?
Q6	In the future, I expect to plan the company's external funding requirements differently
Q7	In the future, I would likely approach the following sources for funding
Q8	What new/other external fundings have you obtained since the first external funding obtained?
Q9	What was your role in the company's first round of funding?
Q10	Prior to the company accessing its first external funding, which of the following was the company unsuccessful in obtaining?
Q11	Would you exchange a portion of your shares (equity) for the opportunity to access growth finance in the future?

*Source: Created by the Researcher*

## **Section 6 – Firm Structure**

The firm structure is a factor to measure the outcome of BG SMEs. The firm structure is treated as dependent variable with dependence to the EFM obtained. Question 1, 3, 4, 5 and 6 are important components of the firm structure. Each question within this section is outlined in table 4.6 below.

**Table 4.6: Firm Structure Questions of the Questionnaire**

<b>Question No</b>	<b>Description of Question</b>
Q1	Within the first three years of the company receiving its first external funding, how did the objectives of the company change?
Q2	Was the management structure discussed during the negotiations with financiers/investors?
Q3	During the period and within the first three years of the company receiving its first external funding, how did the management structure change?
Q4	How did the change in management structure impact the performance of the company?
Q5	Did the change in management structure lead to an addition/change of board members during or after the finance was obtained?
Q6	If there was no change, how did this affect the performance of the company?

*Source: Created by the Researcher*

<b>Question No</b>	<b>Description of Question</b>
Q1	Within the first three years of the company receiving its first external funding, how did the objectives of the company change?
Q2	Was the management structure discussed during the negotiations with financiers/investors?
Q3	During the period and within the first three years of the company receiving its first external funding, how did the management structure change?
Q4	How did the change in management structure impact the performance of the company?
Q5	Did the change in management structure lead to an addition/change of board members during or after the finance was obtained?
Q6	If there was 1 change, how did this affect the performance of the company?

## **Section 7 – Social Return on Investment**

In this section, the questions have been designed to identify the impact of EFMs obtained on the SROI goals and performance of BG SMEs in Nigeria. Question 3 and 8 form the key variables that statistically measure the performance varying impact levels. Other questions have been used as filter questions to identify BG SMEs that had social objectives and were focused on SROI performances (see table 4.7).



**Table 4.7: Social Return on Investment Questions of the Questionnaire**

Question No	Description of Question
Q1	Does the company have any social or ethical objectives?
Q2	Describe your company's social or ethical objectives?
Q3	Does your company calculate the social return on investment (SROI)?
Q4	Select the statement that best describes your social return on investment (SROI)
Q5	Did your company consider the social or ethical objectives of the company when sourcing for funding?
Q6	Was the social or ethical objective discussed when negotiating for funding?
Q7	Did investors want feedbacks/updates on the company's progress on its social or ethical objectives?
Q8	Was there a benchmark discussed with investors to ascertain the successes of achieving the social & ethical goals?
Q9	Within three years of obtaining the first external finance, how did the company's performance in achieving its social and ethical objectives change?
Q10	The investors played an active role in the company's drive to achieve social or ethical objectives

*Source: Created by the Researcher*

## **Section 8 - Profitability**

The performance of the BG SMEs is also measured using profitability outcomes in section 6. The questions presented in this section allows the research to identify the level of returns the BG SMEs earned post funding received from EFM (Watson, 2016). The performance views the overall efficiency and productivity of firms, in a bid to measure what the outcomes of all the operational activities and resource management strategies of firms (Agwu, 2018). This section has been developed to help achieve the

aim of the research and to understand the value and impact EFMs play in the performance of BG SMEs in Nigeria. Thus, the outcome of the financial performance of BG SMEs are seen to be dependent on the EFM the BG SMEs have obtained. It is, therefore, relevant to measure this financial performance, to not just determine the level of achievement of the firm in relation to their objectives (Makanga & Paul, 2017), but also to ascertain the level of influence the EFM they have obtained has played in the financial performance.

In this section, question 1 again has been used as a filter to ensure that the BG SME has obtained at list one funding. This question is added here to further verify the response presented in Q3 under section 4. Q2-8 of the section measure the financial performance of the BG SMEs while Q9 aims to know if the firm's market share had change post EFM funding. Q9 is seen as a measure of performance described as 'sales-based' and stills forms a financial outlook of performance (Eniola & Ektebang, 2014).

**Table 4.8: Profitability Questions of the Questionnaire**

Question No	Description of Question
Q1	How many times has your company obtained external funding since being established?
Q2	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's profit
Q3	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's sales turnover
Q4	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's net profit margin
Q5	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on investment (ROI)
Q6	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on equity (ROE)
Q7	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on asset (ROA)
Q8	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on sales (ROS)
Q9	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's market share

*Source: Created by the Researcher*

## 4.8 Data Analysis

### 4.8.1 Quantitative Data Analysis

To analyse the data collected using online questionnaire and to test the research hypothesis (H1, H2, H3), Factor Analysis and Ordinal Logit Regression were performed. The goal of Factor Analysis is to reduce the dimensionality of the data with minimal loss of information by identifying and using the structure in the correlation matrix of the variables included in the analysis (Bandalos & Finney, 2018). Factor

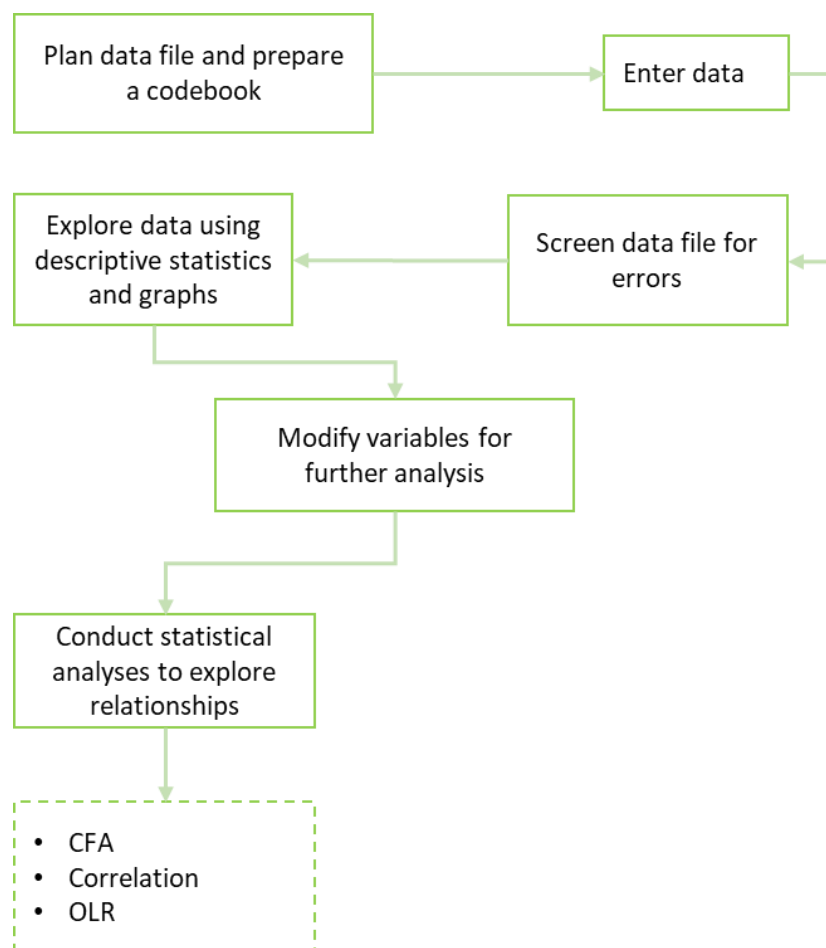
analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. The one-dimensionality of factors can be assessed using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). In cases where the research structure model stands individually and does not include strictly information previously used in existing literature the CFA becomes appropriate (Keisidou et al., 2013). The CFA analytical method enables the research to assess the relationship that exists between entrepreneurial finance models and BG SMEs within the environmental ecosystem they operate in.

This research uses the questionnaire to filter factors that potentially interact, for example, the different investment patterns of the various entrepreneurial finance models, their predisposition to selecting the type of firms (type, size and sector) and why they are willing to invest in (Luukkonen et al. 2013), and finally, the financing stage. To filter the financing stage, the research will review firms that have received any one or more of the entrepreneurial finances being investigated in this research work irrespective of the stage of financing; that is all finance received in the seed funding stage, the first or second investment rounds. The control measure adopted here, will help the research use the measurement metrics stated to evaluate the impact of the entrepreneurial finance models received, comparing the BG SMEs pre- and post-obtaining the finance without having to distort value impact of the funding. This is made possible by ensuring that the research focuses only on BG SMEs that received this funding within 1-5years of being in operation.

The data analysis was run using “Statistical Package for the Social Sciences” (“SPSS”) version 26 AMOS SPSS version 26. SPSS is a statistical software widely used in analysing different types of data obtained from different platforms (IBM SPSS Amos, 2022; George & Mallery, 2019).

The data analysis followed a systemic process flow (see figure 4.7). The first stage of the was the preliminary stage which included planning the data file and preparing the code book. The data was entered into SPSS applying the required codes generated before screening the data file for any potential errors. The missing data test alongside other tests were done at the preliminary stage of screening the data file before descriptive statistical analysis was run on the data.

**Figure 4.7: Illustration of Data Analysis Process**



*Source: Created by the Researcher*

#### **4.8.1.1 Preliminary Data Analysis**

The sample size of this research is an important element to the research. The use of factor analysis in this research makes the sample size an important aspect in ensuring the reliability of the research outcomes (Field, 2000). Beyond the sample size is screening to ensure the fits the required purpose. In screening for error, mitigating against any irregularities and checking the sampling adequacy, the preliminary data analysis was done as described in figure 4.7 above.

#### **4.8.2 Screening Data File for Errors**

##### **4.8.2.1 Missing Data**

To screen for any errors in the data file, the research checked for any missing data in the survey data. Missing data can occur in situations where a respondent does not include a response (non-response) to a question or when some variables for a respondent are missing values for reasons which could include refusal to provide the information or simply not providing any information in a field or multiple fields.

Missing data can affect the output in statistical analysis, which is why the research screens for the data file. Missing data can be resolved by either adopting the deletion process, the imputation process or by accepting the missing data if it would not have a significant impact on the output.

The research used Little's Missing Completely at Random Test (Little's MCAR test) to check if the missing data identified were missing at random and to see the missing value patterns.

#### **4.8.2.2 Kaiser-Meyer-Olkin (KMO) and Bartlett's Test**

The KMO test helps the research to understand if the variables established in this research are unrelated and thus determining their suitability for a structured analysis. The KMO test measures the suitability of the data collected for factor analysis. Using the KMO test, each variable's sampling adequacy in this research is measured which indicates if the responses provided are adequate. Kaiser signals that a KMO value of over 0.5 could be accepted as a minimum but are described as mediocre with a more suitable recommended value of over 0.7-0.8 (Field, 2000).

Another measure of the strength of the relationship between and amongst variables is the Bartlett's test. This test is used in this research to test the null hypothesis, represented as  $H_0$  has a correlation matrix which is an identity matrix. The Bartlett's test significance level of less than 0.05 requires that the null hypothesis is rejected.

#### **4.8.2.3 Communalities and Total Variance Explained**

The output analysis includes the measure of the communalities of the variances in each variable and how much have been accounted for by the extracted factors (Field, 2000). A communality value of  $>0.5$  can be included for further analysis. Variables with communalities of  $<0.5$  should be removed from additional factor analysis.

#### **4.8.2.4 Multicollinearity Test**

Multicollinearity test in broad terms to include the degree of linear intercorrelation of variables (Hae Kim, 2019). Explanatory variables say  $X_1, X_2, \dots, X_k$  that have a perfect linear relationship are said to be exact collinearity. Where one variable in this research determines the outcome of another variable, an exact collinearity can be said to have occurred (Gujarati & Porter, 2009).

An exact linear relationship can be expressed as:

$$\lambda_1 X_1 + \lambda_2 X_2 + \dots + \lambda_k X_k + v_i = 0$$

$v_i$  = stochastic error

Source: (Gujarati & Porter, 2009)

In this research, a strong relationship between variables is sufficient and does not need to be a perfect linear relationship (Hae Kim, 2019).

#### **4.8.3 Validity and Reliability of this Research**

In research, the reliability and validity tests the overall elements and components of the research, checking for the consistency and validity of what the research aims to measure (Oleinik, 2015; Anney, 2014).

##### **4.8.3.1 Validity**

Validity is an important element in research (Nørreklit, et al., 2016), and it asserts that a researcher through data collection and analysis has achieved what they initially set out to achieve in the research (Salzberger, et al., 2016).

There are generally three types of valuations to ascertain the validity of a research-construct validity, internal validity, and external validity (Creswell & Clark, 2017). Construct validity concerns itself with the extent the research measures what it sets out to measure (Salkind, 2014). The internal variable seeks to highlight the causal relationship of variables within the research. Whilst the external validity is concerned with the generalizability of the research findings. The external validity seeks to demonstrate that the findings made in the research are relevant and can be held true for a larger or different group of the population.



#### **4.8.3.2 Reliability**

The concept of reliability evaluates the process of data collection and data analytical procedures are reliable and capable of reproducing consistent results should the research be repeated at a different time or by a different researcher (Heale & Twycross, 2015). A reliability check will be conducted to ensure the results are free of any errors and thus improve the credibility of the results in this research (Oleinik, 2015). The reliability test measures coherence and expects that the results of a previous research conducted if conducted today using the same processes should produce the same results. According to Johnson et al. (2007) the measures of reliability can be represented using the following levels:

$\leq 0.90 \approx$  excellent reliability

$0.70-0.90 \approx$  high reliability

$0.50-0.70 \approx$  moderate reliability

$\leq 0.50 \approx$  low reliability

Xia et al. (2014) agree that a high reliability range of  $>0.70$  is acceptable in social science research. This research adopts a cut-off point of  $0.70$ .

#### **4.8.4 Test of Hypothesis**

##### **4.8.4.1 Structural Equation Modelling**

This research used structural equation modelling (SEM) to evaluate the impact and relationship between the different EFMs on the performance and outcome of BG SMEs. The SEM is used here as a framework of multiple and different multivariate methods. The research adopts the confirmatory factor analysis (CFA) to test the

various hypotheses and investigate the impact of EFMs on the performance and outcome of BG SMEs (Byrne, 2010). To test the data and sample adequacy, the KMO and Bartlett's test of sphericity was done with both results meeting the requirements (see section 5.9).

#### **4.8.4.2 Ordinal Logistic Regression**

This research uses ordinal logistic regression (OLR) model to analyse data and test hypotheses as it is appropriate and effective for the dependent variables that have more than two levels or categories (El-Habil, 2012; Treiman, 2009).

OLR enables this research to predict the dependent variables given the multiple independent variables in this research. This highlights the statistical significance of the impact of the different EFMs on the profitability, firm structure and SROI of BG SMEs.

Five sets of procedures were carried out with the OLR. The procedures include, working with OMS, running the PLUM procedure, outputting the PLUM parameters estimates using OMS, saving the newly created file and generating odds ratios. The PLUM and OMS are statistical features found in SPSS under the Utilities tab function. The OMS helps to calculate the 'odds ratio' and essentially their 95% confidence intervals which could be seen in the next couple of tables below.

The OLR model generates several outputs which have been used to test the research hypotheses (SPSS TN, 2022). The different outputs are generated under the following headings in SPSS:

1. **Case Processing Summary:** This output presents basic statistical information which include the number of valid data and information on missing data.
2. **Model Fitting Information:** The -2 Log Likelihood for *Intercept Only* and *Final* models are highlighted in the Model Fitting Information output. In this output, a *significance level of <0.05 is accepted*. This output shows how well the model fits the data.
3. **Goodness-of fit:** In this output, the aim is to fail to reject the null hypothesis. The *acceptance level of significance is >0.05*.
4. **Pseudo R-Square:** This output includes the *Cox and Snell* measure, *Nagelkerke* measure and *McFadden* measure (SPSS TN, 2022). The *Nagelkerke* values show the extent to which the model explains the variance in this research's dependent variable.
5. **Parameter Estimates:** The outputs and analysis in sections 6.13.1 to 6.13.4 below focus on the outputs in the Parameter Estimates. The *Location* in the Parameter Estimates table outlines the variables and their relationship with values of estimates provided in the next column. They explain the log odds. The *acceptable statistically significant level (p-value) is <0.05*.
6. **Test of Parallel Lines:** This output tests' the assumptions that are held of proportional odds. The *acceptable significant level for this is  $\geq 0.05$*

#### 4.9 Preliminary Analysis of Data

The initial analysis of data is an important step in the research analysis process to safeguard against data error and to ensure good quality of results/findings. The first stage of entailed coding and recoding of the data which was followed by screening for

any missing data. Following steps described in section 4.5, the research arrived at a sample size of 237 companies.

#### **4.9.1 Data Screening**

##### **4.9.1.1 Data Coding on SPSS**

The data entered from the questionnaire information were recoded to fit the input for analysis. The process was necessary to ensure the questionnaire was clear and free of ambiguity.

As noted in section 4.7.1 of this research, the questionnaire had eight sections with the first section being the information and consent section. This section as an ethical requirement ensures that the researcher uses only data from respondents that have provided their consent on all items. Following the first section are sections that obtain relevant data that can be used in the research analysis. These sections were designed in the questionnaire for the ease and understanding of respondents but have been rearranged and recoded appropriately. This entails that several items have been recategorized into other dimensions and variables (see tables 4.9 to 4.17).

The first recategorized section is the criteria and knowledge check. Dimension 1 of the section collects basic data about the company and their financing. Eight lines of questions were recoded with unique identifiers from ‘CC1 to CC8 (see table 4.9 below).

Dimension 2 included questions that provided knowledge of EFM. Again, eight lines of questions were reviewed and recoded as KEFM, with series beginning from KEFM1 – KEFM8.

**Table 4.9: Data Coding for Descriptive Data**

Descriptive Data	Criteria and Knowledge Check		
	Dimension 1 - Criteria Check		Recoded Values
	Q2	When was your company established?  Note: This will mean when your company was registered and became a legal entity.	CC 1
	Q3	Where is the headquarters of the company? - Selected Choice	CC 2
	Q4	How many countries does your company operate in either through positioning, delivery of products, or services (Including the country you are headquartered)?	CC 3
	Q5	From the time of establishing the company, when during the life of the business did you begin to operate internationally?	CC 4
	Q6	Did you obtain any external funding within the first 60 months (5 years) of establishing the company?  Note: External funding is the phrase used to describe funds that the company obtains from outside of itself. (E.g. Bank loan, government grants, venture capital funding, etc.	CC 5
	Q7	Approximately, what percentage of your company's total turnover in 2019 is accounted for by your company's international operations?  Note: International operations comprise sales of goods or the provision of services to countries other than the one your company is headquartered in.	CC 6
	Q43	How many times has your company obtained external funding since being established?	CC 7
	Q9	What is the main activity of your company? - Selected Choice	CC 8
	Dimension 2 - Knowledge of EFM		Recoded Values
	Q19	Which of the following external funding options do you know about?  Note: Please choose one or more of the funding sources you know about - Selected Choice	KEFM 1
	Q23	Prior to accessing your first external funding, how did you fund the operations of the company? - Selected Choice	KEFM 2
	Q24	In the future, I expect to plan the company's external funding requirements differently	KEFM 3

	Note: Reflecting on the external funding you have obtained, would you go for different funding, or go for the same funding initially obtained?	
<b>Q25</b>	In the future, I would likely approach the following sources for funding - Selected Choice	<b>KEFM 4</b>
<b>Q26</b>	What new/other external fundings have you obtained since the first external funding obtained? - Selected Choice	<b>KEFM 5</b>
<b>Q27</b>	What was your role in the company's first round of funding?	<b>KEFM 6</b>
<b>Q28</b>	Prior to the company accessing its first external funding, which of the following was the company unsuccessful in obtaining? - Selected Choice	<b>KEFM 7</b>
<b>Q29</b>	<p>Would you exchange a portion of your shares (equity) for the opportunity to access growth finance in the future?</p> <p>Note: Should you need additional funds for your company and you approach a fund provider, would you accept an offer to give the fund provider a part of your company in exchange for the money you require.</p>	<b>KEFM 8</b>

Each code or question contains options with responses provided in raw format by the research participants in the range of the options. For example, as shown in table 4.12, CC1, three options were featured – less than 5 years, 5-10 years and over 10 years. These values for statistical purposes were recoded to numeric values – 3, 2 and 1 respectively.

**Table 4.10 Example of Recoded Options for SPSS**

<b>Question</b>	<b>Options</b>	<b>Recoded Values</b>
When was your company established?	Less than 5 years	1
Note: This will mean when your company was registered and became a legal entity.	5 - 10 years	2
	Over 10 years	3

These codes were necessary in the analysis conducted by SPSS as numerical configurations are recognized and interpreted based on clear codes. All other sections of the data received were recoded in a similar systematic fashion and are detailed in appendix 5.4.7.

**Table 4.11: Data Coding for Moderating Variables**

Moderating Variable	Firm Size		
	Firm Size		Recoded Values
	Q8	How many people does your company currently employ either full or part-time at all its locations?	FS 1
	Q10	What was the annual turnover of your company in 2019?  Note: Annual turnover refers to your company's total revenue	FS 2
	Management Profile		
	Dimension 1 - Professional Experience		Recoded Values
	Q11	Do you currently hold any of these roles in the company?  Note: Please tick one or more of the options that apply to you. - Selected Choice	PE 1
	Q12	Did you previously hold any of these roles in the company which you do not currently hold?  Note: Please tick one or more of the options that apply to you. - Selected Choice	PE 2
	Q13	What is your area of expertise? - Selected Choice	PE 3
	Q14	How many years of experience do you have in the company's current industry?	PE 4
	Q15	My knowledge of this industry helps me address funding requirements in my company	PE 5

The options for items FS1 and FS2 were developed using the definition of SMEs in Nigeria as given by SMEDAN. SMEs as defined by SMEDAN (2013) include the number of employees a firm had and the firm's annual turnover.

PE3 had 22 options indicating areas of expertise of the respondents. This was transformed into 10 key options and recoded into numeric values from 1-10. This section had responses similar to one of more other options, whilst others had few

representations. Table 4.11 shows the ‘Management’ profile that recorded the professional experience of managers with 8 lines of items as a moderating variable.

**Table 4.12: Data Coding for Control Variable**

Control	Dimension 2 - Academic Qualification		Recoded Values
	Q16	What is your highest educational qualification? - Selected Choice	AQ 1
	Q17	My academic qualifications have helped me address funding requirements in my company	AQ 2
	Dimension 3 - Age		Recoded Values
	Q18	What is your age?	Age 1

Following from the research model, the research controls for the age of respondents and their academic qualification. Both dimensions were recoded with new values as indicated in table 4.12.

**Table 4.13: Data Coding for Independent Variable**

Independent Variable	Entrepreneurial Finance Model		Recoded Values
	Q20	Which of the following external funding options did your company apply to within the first 60 months (5 years) of the company’s establishment?  <i>Note: Please choose one or more of the funding sources your company applied for between the first 5 years the company was established. - Selected Choice</i>	EFM 1
	Q21	Which one of the following external funding sources did your company obtain its first funding from?  <i>Note: Select one external fund you obtained first within 5 years the company was established. - Selected Choice</i>	EFM 2
	Q22	What key factors did you consider when planning to obtain external funding?	EFM 3

The EFM dimension makes up the independent variable as highlighted in table 4.13 above. EFM 1 contains the key responses to Q20 which identifies the different EFMs



that were used by the BG SMEs. Each of the EFM's were analysed to ascertain their impacts to the performance and outcome of these BG SMEs.

Q21 and Q22 were recoded to EFM 2 and EFM 3 for analytical use in SPSS.

**Table 4.14: Data Coding for Dependent Variable – Firm Structure**

Dependent Variables	Dimension 1 - Firm Objectives and Management Structure		Recoded Values
	Q30	<p>Within the first three years of the company receiving its first external funding, how did the objectives of the company change?</p> <p><i>Note: The objectives will include the company's goals, mission and vision, and core values.</i></p>	FOMS 1
	Q31	<p>Was the management structure discussed during the negotiations with financiers/investors?</p> <p><i>Note: This question is asking if the management staff and structure was discussed during the period the company was trying to obtain external finance</i></p>	FOMS 2
	Q32	<p>During the period and within the first three years of the company receiving its first external funding, how did the management structure change?</p> <p><i>Notes: This question is asking if the management staff was changed or shuffled during and after the period the company was trying to obtain external finance because the investors suggested a change, or did this change just happen and not because of the external funding?</i></p>	FOMS 3
	Q33	<p>How did the change in management structure impact the performance of the company?</p> <p><i>Note: Performance is included to mean profitability, market share, sales turnover, etc.</i></p>	FOMS 4
	Q34	Did the change in management structure lead to an addition/change of board members during or after the finance was obtained?	FOMS 5
	Q35	If there was no change, how did this affect the performance of the company?	FOMS 6

The firm objectives and management structure is a key measurement metrics of the research aim and objectives. This measures the outcome of BG SMEs and the impact EFMs have had on the firms' objective and the management and board compositions. Q30 – Q35 of the questionnaire were recoded with new values – FOMS 1 – FOMS 6 respectively (see table 4.14). The management structure is one of the three dependent variables that are measured in the research.

**Table 4.15: Data Coding for Dependent Variable - SROI**

Dependent Variables	Dimension 2 - Social and Ethical Objectives		Recoded Values
	<b>Q36</b>	Does the company have any social or ethical objectives?  Note: The social objectives of your company would refer to the objectives your company has set towards customers, employees, investors, suppliers, government, the community, and the general public.	<b>SROI 1</b>
	<b>Q37</b>	Describe your company's social or ethical objectives?	<b>SROI 2</b>
	<b>Q38</b>	Does your company calculate the social return on investment (SROI)?  Note: This means if your company calculates what it gains back in every N1 it spends on creating a social value	<b>SROI 3</b>
	<b>Q39</b>	Select the statement that best describes your social return on investment (SROI)	<b>SROI 4</b>
	<b>Q40_1</b>	For each of the following items, please choose 2, 1, or Prefer 1t to say - Did your company consider the social or ethical objectives of the company when sourcing for funding?	<b>SROI 5</b>
	<b>Q40_2</b>	For each of the following items, please choose 2, 1, or Prefer not to say - Was the social or ethical objective discussed when negotiating for funding?	<b>SROI 6</b>
	<b>Q40_3</b>	For each of the following items, please choose 2, 1, or Prefer not to say - Did investors want feedbacks/updates on the company's progress on its social or ethical objectives?	<b>SROI 7</b>
	<b>Q40_4</b>	For each of the following items, please choose 2, 1, or Prefer not to say - Was there a benchmark discussed with investors to ascertain the successes of achieving the social & ethical goals?	<b>SROI 8</b>

	<b>Q41</b>	Within three years of obtaining the first external finance, how did the company's performance in achieving its social and ethical objectives change?	<b>SROI 9</b>
	<b>Q42</b>	The investors played an active role in the company's drive to achieve social or ethical objectives	<b>SROI 10</b>

To ascertain the social and ethical objectives of BG SMEs, ten questions were presented in the questionnaire issue to respondents. These questions were aimed at obtaining measurable results on the SROI made by firms. Each line of question was reconfigured to produce a code for clear analysis (see table 5.15).

**Table 4.16: Data Coding for Dependent Variable - Profitability**

<b>Dependent Variables</b>	<b>Dimension 3 - Profitability</b>		<b>Recoded Values</b>
	<b>Q44_5</b>	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on equity (ROE)	<b>Profit 1</b>
	<b>Q44_6</b>	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on asset (ROA)	<b>Profit 2</b>
	<b>Q44_8</b>	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's market share	<b>Profit 3</b>

This research aims to measure the financial performance of BG SMEs and in doing so three measurement metrics are being used – ROE, ROA and market share. These profitability measures have been recoded as Profit 1, Profit 2 and Profit 3 respectively (see table 4.16).

#### **4.9.1.2 Little's Missing Completely at Random**

Little's Missing Completely at Random (Little's MCAR test) was used to check for any missing data in the responses provided by the 237 BG SME respondents. All

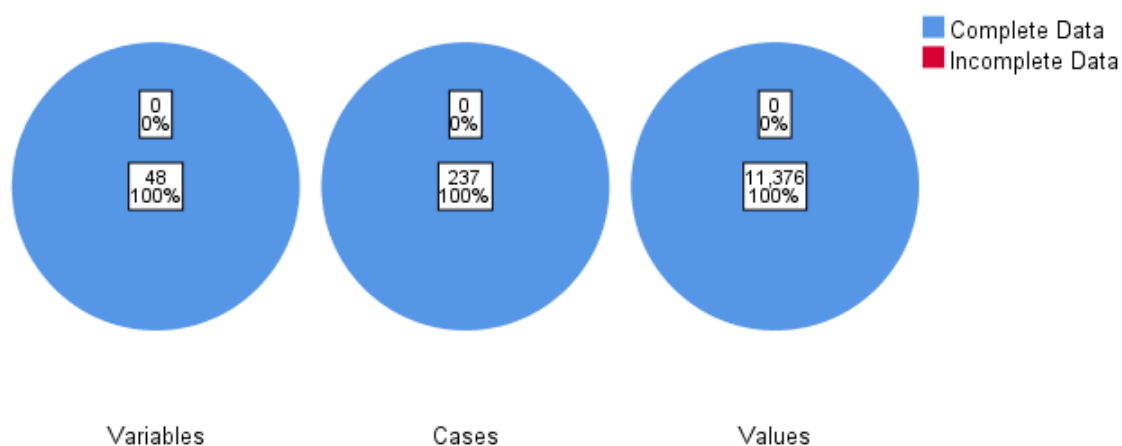
components of the data from the 237 BG SMEs were reviewed and the tests results are highlighted below.

Number of cases outside the range ( $Q1 - 1.5 \times IQR$ ,  $Q3 + 1.5 \times IQR$ ).

#### 4.9.1.3 Multiple Imputation: Missing values

The initial preliminary review of missing values identified three incomplete data. The analysis on SPSS was set to identify any column and row that had any missing value thus the minimum percentage of missing values for variable to be included was set as 0.0%. The incomplete information was provided under the SROI and EFM variables. In cases where variables contain less than 10 percent of missing data, researchers can accept this as it does not present problems to the data (Hair et al., 2016). However, these entries were deleted as key data required for data analysis were missing. Following the deletion of the missing data entries, the data screening for missing values was conducted again. The new analysis showed 0% missing values (see figure 4.2). This allowed the research to progress with testing for any duplicate data. The sample size still remains above 200 and valid for a SEM and logit regression analysis (Kline, 2005).

**Figure 4.8: Overall Summary of Missing Values**



Based on figure 5.2, the variable summary table is not displayed because no variable has more than 10% missing values (SPSS TN, 2022). The data sets analysed do not have any missing data and as indicated in Figure 5.2 all primary cases used are 100 per cent valid.

#### 4.9.1.4 Testing for Duplicate Data

The questionnaire was setup to prevent undue influence through multiple entries. In addition, the data was tested to check and filter any duplicate data (see Table 5.1). Duplicate data could infer that a respondent could have filled the form more than once or responses provided by different respondents were similar.

The duplicate data test conducted in the preliminary analysis shows that there were no duplicate cases within the data set. Again, the result indicates that 100 percent of the primary cases are valid and would not unduly influence the findings or swing the results in one direction.

**Table 4.17: Test for Duplicate Data**

		Frequency	Percent	Valid Percent	Cum. Percent
Valid	Duplicate case	0	0.0	0.0	0.0
	Primary case	237	100.0	100.0	100.0
	<b>Total</b>	237	100.0	100.0	

#### 4.10 Skewness and Kurtosis Test

The normality test was conducted for the variables, measuring skewness and kurtosis of the data (see table 4.17). In this case, the mean of different outcomes with similar units were measured. This follows ideas from Zahra et al. (2009) on summing the total of outcomes. The values of skewness and kurtosis should be in the range of  $\pm 1.96$  and can be rounded up to  $\pm 2$  (Hair et al., 2010).

**Table 4.18: Descriptive Statistics of Skewness and kurtosis values (n = 237)**

	N	Min range	Max range	Mean	Std. Deviation	Skewness Statistics	Std. Error	Kurtosis Statistics	Std. Error
meanFirmStructure	237	1.25	3.00	2.4219	0.46284	-1.147	0.158	-0.066	0.315
meanProfit	237	2.00	5.00	3.8200	0.60400	0.242	0.158	-0.173	0.315
meanMgtExp	237	1.00	5.00	3.9072	1.20725	-0.680	0.158	0.935	0.315
meanFS1	237	1.00	4.00	2.4515	0.69712	-0.128	0.158	0.256	0.315
meanFS2	237	1.00	5.00	3.3460	1.33979	-0.205	0.158	1.009	0.315
meanFirmSize	237	1.00	4.50	2.8987	0.83633	-0.322	0.158	0.624	0.315
meanValueAdded	237	1.33	3.00	2.3052	0.53163	-1.087	0.158	0.499	0.315
Valid (listwise)	N 237								

In table 4.18 above, it can be seen that the data complies with the requirements of the normality test as both skewness and kurtosis values are within the  $\pm 2$  range.

#### 4.11 Outlier Test

The outlier test helps the research to observe and identify variables that are abnormal and distant from other variable values in a sample. The outlier test adopted checks for extreme cases by combining information obtainable in each item within the variable (Zijlstra, et al., 2007). The outlier test was used to ensure the viability of the results by ensuring that the data did not include any abnormal z-scores that could shift the mean of the data to an extreme left or right position. The standardised z-score method was used to test for outliers with acceptable z-scores of  $< 3.29$  ( $p = 6.001$ , two-tailed test) (Tabachnick & Fidell, 2013). The first step was using the standardized variable option on the descriptive input on SPSS, then checking for z-scores for each new item created that are potential outliers and above 3.29 (see appendix 5.5) (Barnett & Lewis, 1994).

Ten cases were discovered as outliers using the z-score approach which were >3.29. Further review showed that all ten cases were extreme cases under the SROI dependent variable (see appendix 5.5). This variable as highlighted in the descriptive data analysis could not be further analysed as the BG SMEs in the sample size do not measure this outcome (see appendix 5.5). Following that, the variable was removed from further analysis. The test was run again, and no outliers were detected.

#### 4.12 Test of Reliability

To measure for internal consistency the research used the Cronbach's Alpha. Cronbach Alpha of >0.7 was set as the minimum point. The Cronbach Alpha for firm structure and profitability were 0.872 and 0.816 respectively. The results in table 4.19 show that the variables in the reliability test were above 0.7 which reflect a 'good' and acceptable level of internal consistency in the dependent variables (Pallant, 2016).

**Table: 4.19: Cronbach Alpha for Dependent Variables**

<b>Variable</b>	<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>	<b>Valid Cases</b>
Firm Structure	0.872	0.882	3	237
Profitability	0.816	0.816	3	237

The results displayed in table 5.11 show that the Cronbach Alpha are above 0.7, therefore the outcome is deemed ok and acceptable.

#### 4.13 Multicollinearity and Singularity Test

When conducting regression and structural equation model, a multicollinearity test is done to assess where two or more independent variables could be correlated between and amongst themselves (Scott Jones, 2019). Multicollinearity test is important as in

cases where two or more independent variables are highly correlated, it becomes difficult to establish which and how each of those correlated independent variables impact on the dependent variables being measured (Franke, 2010). Authors have noted that multicollinearity is not a modelling error and may not harm the research data outcome (Alin, 2010). There are two key items that are indicated when multicollinearity is measured which this research looks at – communality and eigenvalue.

Communality is a definition of common variance that ranges between 0 and 1. Values closer to 1 suggest that extracted factors explain more of the variance of an individual item and is computed by SPSS in the factor analysis process (Blunch, 2013; Odum, 2011). The eigenvalue represents the total amount of variance that can be explained by a given principal component. A multicollinearity check was conducted on the independent variables to check with expectations of having results that are closer to 1. The results in the test conducted show that the results meet the requirement and are acceptable (see appendix 5.3).

#### **4.14 Variable Correlation**

The variable correlation assesses and indicates the relationship between variables. The correlation examines how correlated these variables are and tend to mean that a change in the value of one variable will lead to the change the other variable (Antonius, 2013). This research as part of the statistical analysis conducted, assessed the variable correlation and the results reflect an acceptable relationship of variables (see appendix 5.3).

Correlation test has been used in this research to predict the extent one variable is related to other variables (Greasley, 2008). For example, the determining the



correlation or identifying what extent crowdfunding is related to the different profitability indicators measured.

#### **4.15 Kaiser-Meyer-Olkin (KMO) and Bartlett's Test**

This research uses the KMO and Bartlett test to establish if the data are suitable for factor analysis. Using KMO enables variable testing within this research's sample to help understand if they are adequate to correlate. On the other hand, Bartlett's Test as a statistical test, can be utilized when evaluating the research hypothesis to observe if the variables are uncorrelated within the sample (Hair et al., 2010).

The KMO and Bartlett's test are important while conducting a Factor Analysis as they can help reduce the dimensionality of the data with minimal loss of information by identifying and using the structure in the correlation matrix of the variables included in the analysis. Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. KMO and Bartlett's Test are relevant tests that precedes confirmatory factor analysis (Hinton et al., 2004).

The KMO value of 0.6 is suggested as the minimum accepted value with values closer to 1 being stronger representations. While typically the Bartlett's Test of  $p < 0.05$  (Hair et al., 2010).

**Table 4.20: KMO and Bartlett's test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.713
Bartlett's Test of Sphericity	Approx. Chi-Square	3250.726
	df	465
	Sig.	.000

Following the analysis run (see table 4.20), the results show:

- a. The KMO value is over 0.6;
- b. The sig. level for Bartlett's test is .000 which is below 0.05; and
- c. These suggest there is a substantial correlation in the data thus acceptable.

#### **4.16 Ethical Consideration**

The Academy of Management (2006) iterates that researchers should conduct their research in manners that promote the safety, privacy, wellbeing and dignity, and the freedom of participants involved in the research. This research has been conducted within ethical guidelines and important ethical considerations were made prior, during and post the research stages.

The data collection instrument for this research was an online questionnaire designed to be distributed to SMEs in Nigeria with human participants expected to partake in the completion of the questionnaire. The data collections instrument was designed as an anonymous questionnaire, which did not request the identity of the firms or of the respondents. This ensured in protecting and respondents' identity while maintaining the firms' privacy (Academy Management, 2006), and from being able to be identified by third parties. Further to that, the researcher using the Qualtrics survey design

disable the internet provide (IP) address locator to ensure the respondents could not be tracked by their responses. This was done to ensure the responses were totally anonymous and also to encourage respondents to provide truthful answers.

Prior to commencing data collection, the researcher sort the review and approval of the Ethic Review Board of Sheffield Hallam University by completing the ethical form. The research process was approved and provided a unique identification – ER1000, (Diener & Crandall, 1978).

The research ensured that it was honest and transparent in its disclosures of the sampling procedure and arriving at is sample size.

Other ethical considerations made include participant consent, data management and problem/conflict resolution processes.

#### **4.16.1 Participant Consent**

An email was sent to all potential participant & companies. The email sent contained a participant information sheet (PIS) which contained the aims and objectives of the research, data management technique, right of the participant and the legal basis covering the research.

The email let potential participant know that if the wished to participate in the research, they could have access to the online questionnaire link provided within the email.

There were options to unsubscribe from any future emails or possible phone calls from the researcher in future.

The online questionnaire had an introductory page, which again, described the research aims and objectives, contributions of the research and the legal basis covering the research. Participant were required to provide consent on the participant consent page on the online questionnaire before proceeding to filling the questionnaire.

The items in the questionnaire were designed to be anonymous, ensuring no participants or their companies can be identified by the responses and data they provided.

A Pilot study was done to test that the questionnaire was truly anonymous and had languages that were unambiguous.

#### **4.16.2 Data Management**

All data obtained from participants through the online questionnaire developed using the Qualtrics web-bases software. All data collected in the survey will be held securely with all data management information provided to participants in PIS.

There are no risks with the data being provided as they are obtained anonymously and stored confidentially. In additions safe standards were adopted to encrypt and store both original and processed data collected, and the data would be held for a maximum of 10years within the university after which they will be destroyed. The data will not be used to report or identify any individuals and companies when reporting the results and findings.

#### **4.16.3 Legal Basis**

This research is governed by legal policies, and procedures. This research went through the UREC ethical review to ensure that it meets all ethical requirements to protect the interest of participants.

Participants were provided contacts emails to contact the university data protection officer should they have queries of how data will be used. The contact details of the Head of Research. Ethics was also provided to participants if they had any concerns of how they were treated during the research.

A link was also provided to participants that highlights their rights under the new (2018) GDPR (General Data Protection Regulation).

#### **4.16.4 Gender, Race and Ethnicity Neutrality**

The research made careful effort to ensure there was no discrimination based on gender, race, or ethnicity. The questionnaire was designed to focus on key factors contained in the subject area whilst avoiding any segregationally data around the gender of the respondent or their race and ethnic background.

This research weighed the ethical issues in the research, fostering the safety and privacy of participants. There were no identified risks to the participants and their organizations, and sufficient details were made available to the participants. All participants were made aware of their rights and were asked to provide consent before proceeding to complete the questionnaire.

The researcher endeavoured they maintained transparency in their interactions with participants, transparency in the way data was managed, reported, and analysed and eventually published.

#### **4.17 Conclusion**

The research model illustrates the relationship between entrepreneurial finance models and BG SMEs in the environmental ecosystem of Nigeria. Using positivists research philosophy and quantitative method of analysis, the research measures the outcome and performance of BG SMEs using three broad measurement metrics – profitability, firm structure and social return on investment.

Questionnaires were designed as the instrument of data collection and issued on the Qualtrics platform to 1100 management teams of BG SMEs registered in Nigeria. The sample criteria were applied as a filter and the research identified 237 internationalized firms that had their HQ in Nigeria. Based on a 95% confidence level and a 5% margin of error, the ideal sample size should not be less than 146.

Finally, the research followed established ethical processes to protect the integrity of the research, the participants, and all data management requirements.

The analytical process and findings of this research are presented in the next chapter.

## Chapter 5: Findings

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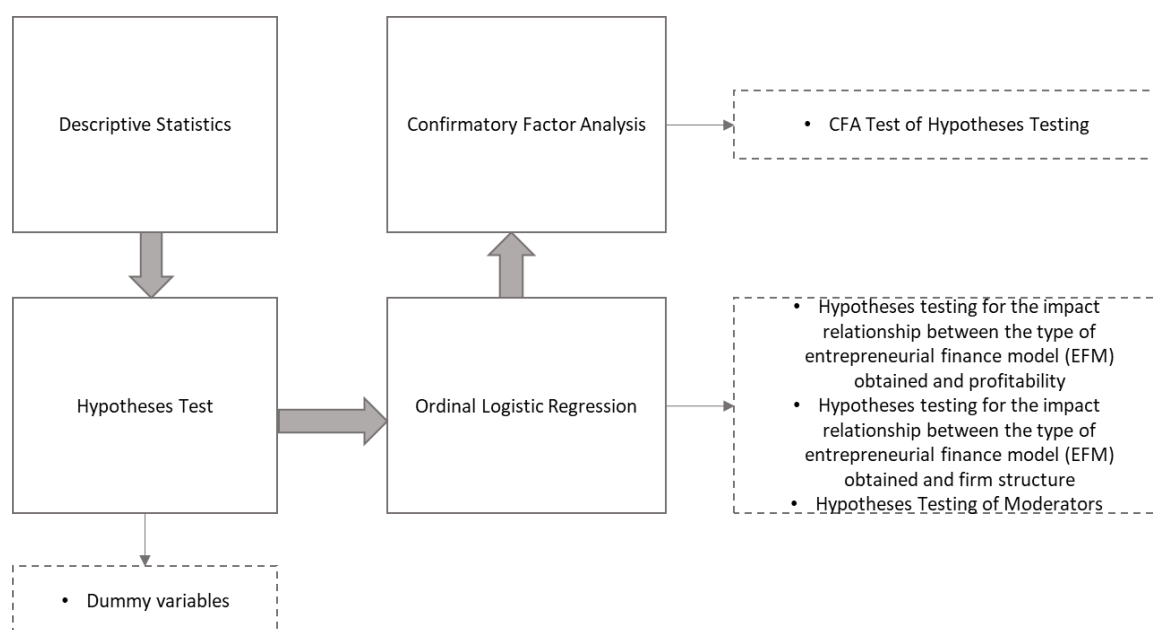
### 5.1 Introduction

The previous chapter allowed this research to identify the appropriate scientific research process to achieve the aim of the research – which is to critically analyse the impact of EFM on the outcome and performance of BG SMEs Nigeria.

Chapter 5 focuses On the findings of the research starting with the descriptive statistics. The results and outcomes from the data analysis will enable this research to highlight how the different EFMs have impacted the performance of BG SMEs, thus creating valuable knowledge that could be useful to policy makers and business owners/managers.

This chapter is structured into four broad categories – descriptive statistics, hypotheses test, ordinal logistics regression and confirmatory factor analysis (see figure 5.1).

**Figure 5.1: Graphic Illustration – Four Broad Areas of Chapter 6**



*Source: Created by the Researcher*

## 5.2 Descriptive Statistics

Following the preliminary data review conducted, the data obtained from 237 BG SMEs headquartered in Nigeria was empirically analysed first using a descriptive review. The descriptive analysis highlighted responses in each item of the questionnaire design by extracting information from the data which have been interpreted in this research to provide valuable outcome and results.

The introductory section of the descriptive data was used to ensure that the respondents meet the requirements of the research sample selection criteria. Thus, ensuring the companies are BG SMEs, have their headquarters in Nigeria and were established within the last 10 years.



**Table 5.0 Criteria and Knowledge Check (n = 237)**

<b>Item</b>	<b>Categories</b>	<b>No. (n)</b>	<b>Percentage</b>
<b>When company was established</b>	5 - 10 years	146	61.6
	Less than 5 years	91	38.4
<b>Company Headquarters</b>	Nigeria	100	100
<b>Countries of operation</b>	Over 5 countries	109	46.0
	2 - 4 countries	128	54.0
<b>Start of international operations</b>	Between 0 - 3 years	116	48.9
	Between 3 - 4 years	91	38.4
	Between 4 - 5 years	30	12.7
<b>Obtained external funding</b>	Yes	237	100.0
<b>Companies' turnover from international operations</b>	Over 50%	99	41.8
	between 30% - 50%	137	57.8
	Less than 30%	1	.4
<b>Number of times firm accessed external finance (EFM)</b>	1x	134	56.5
	2x	77	32.5
	3-5x	26	11.0
	Primary (raw materials)	29	12.2
	Secondary (Finished goods)	20	8.4
<b>Main activity of a company</b>	Tertiary (Service sector)	142	59.9
	Quaternary	17	7.2
	Other	29	12.2

Table 5.0 shows that the 237 firms (100%) that now make up the sample size were established within the last 10years with all having their headquarters in Nigeria. 100% of the firms operate in two or more countries. With majority of BG SMEs operating within 2-4 countries. The defining criteria for BG SMEs adopted in this research includes firms that have internationalized their products and services and operations within 0 -5 years of establishing. 48.9% of firms internationalised within 3 years while 38.4% internationalised within 3 – 4years. The descriptive analysis also shows that all 237 firms had obtained external finance within the first 5 years of business operations.

The main activity of BG SMEs with 59.9% fell under Tertiary (service sector) industries. The primary sector which literature has described to include raw material

stage processing industries had 29 of 237 BG SMEs, whilst the finished goods sector (Secondary) comprised of 8.4% of the sample size (Burger & Hovančíková, 2021). Appendix 5.6 provides a detailed breakdown of the four broad sectors (Primary, secondary, tertiary, and quaternary sectors) used in this analysis.

The knowledge check category in Table 5.0 highlights the respondents' knowledge of the different EFMs and their use of finance prior to obtaining external finance and their future plans. Almost 60% of the respondents noted that they knew more than five (5) of the EFMs listed while only 10% were familiar with just one (1) EFM.

Similarly, appendix 5.4.3 reveals some company details of 237 BG SMEs. The table indicates that 104 or 43.9% of the BG SMEs have 10-49 employees, while 44.3% of BG SMEs employed between 50-249 employees. Just 7.6% and 4.2% of the BG SMEs employed 1-9 employees and 250 employees or more respectively. Finally, for the company profile category, the annual turnover of firms was obtained. This information enables the research to categorize the size of the BG SMEs in the sample size. The table highlights that two sets of 12 BG SMEs can be categorised as having N1 to N25million and more than N100million and up to N200million. An equivalent of 36.7% of the firms had over N200million in annual turnover in 2019. The annual turnover of 44.6% of firms was more than N50million and up to N100million. The annual turnover is a viable component in measuring and categorizing the size of a firm in Nigeria. This helps to define SMEs and large sized firms in Nigeria.

The descriptive analysis of the management profile in appendix 5.4.4 shows 131 respondents of the BG SMEs currently occupied CEO/Managing Director roles, 24 were just founders, while 43 noted they were both the founders and CEO/Managing Directors of the firms. About 92% of the respondents obtained a university degree and

majority of them had more than 3 years of experience in the industry their companies operated in.

### **5.3 Hypothesis Test**

The principal idea of testing the research hypotheses is to ascertain that the data obtained is typical or atypical in relation to the population (Emmert-Streib & Dehmer, 2019). The test statistics/ $t$ -value ( $tn=T(D(n))$ ),  $p$ -value and standardised estimate were used to test all three broad hypotheses and their sub-hypotheses. In dividing the regression weight estimate identified in the analysis by the standard error (S.E.) the  $t$ -value can be calculated. The results of  $t$ -value are significant at above 1.96 while having a  $p$ -value of 0.05. Additionally, this research tested the hypotheses by using the logit regression and SEM. To conduct the logit regression, dummy variables were created for the independent variable.

#### **5.3.1 Dummy Variables**

This research evaluates the impact of different EFMs that BG SMEs have obtained in the financing of their operations on the performance and outcome of these firms. In doing that the research questionnaire instrument identified the different EFMs used by the 237-sample size of BG SMEs. Recall that the research aims to analyse the impact of different EFMs on the performance of BG SMEs. The EFMs analysed in this research include the different EFMs obtained by the 237 firms surveyed. Ten key independent variables were identified with an additional 'other' to reflect responses that could have been hybrid or had one usage. They were recoded and analysed with dummy variables created. The values of EFM selections were transformed to 0 and 1 using SPSS where 1 is the EFM chosen and 0 otherwise (Gujarati & Porter, 2009). The new set of variables were redefined as follows:

- $R_1 =$  1 if the BG SME obtained IVC, and = 0 otherwise  
 $R_2 =$  1 if the BG SME obtained GVC, and = 0 otherwise  
 $R_3 =$  1 if the BG SME obtained PhVC, and = 0 otherwise  
 $R_4 =$  1 if the BG SME obtained CVC, and = 0 otherwise  
 $R_5 =$  1 if the BG SME obtained Bank, and = 0 otherwise  
 $R_6 =$  1 if the BG SME obtained GG, and = 0 otherwise  
 $R_7 =$  1 if the BG SME obtained BA, and = 0 otherwise  
 $R_8 =$  1 if the BG SME obtained Accelerators, and = 0 otherwise  
 $R_9 =$  1 if the BG SME obtained PF, and = 0 otherwise  
 $R_{10} =$  1 if the BG SME obtained Crowdfunding, and = 0 otherwise  
 $R_{11} =$  1 if the BG SME obtained Other, and = 0 otherwise

The dummy variable also known as dichotomous variable is used to estimate the regression and can be expressed as:

$$\hat{A} = a + \sum_{i=2}^4 b_i R_i = a + b_2 R_2 + b_3 R_3 + b_4 R_4 \dots$$

$$\hat{A} = a + \sum b_i R_i = a + b_2 R_2 + b_3 R_3 + b_4 R_4 \dots 4$$

The hypotheses testing is reviewed in the following sub-sections.

## 5.4 Ordinal Logistic Regression

### 5.4.1 Hypotheses testing for the impact relationship between the type of entrepreneurial finance model (EFM) obtained and profitability

Table 5.17 reflects the results of the relationship between the different EFMs obtained and the return on equity (ROE), return on assets (ROA) and the market share of the BG SMEs in Nigeria. The preceding analysis which includes the ‘Case Processing

*Summary, Model Fitting Information and Pseudo R-Square'* are all ok and have been included in appendix 5.7. The table below shows the coefficients, the standard error (Std. Error), the Wald test, the significance levels which are the p-values and the 95% confidence interval of the listed coefficients.

Table 5.1 highlights the results of the relationship between EFMs and ROE, ROA, and market share respectively. Appendices 5.10.1, 5.10.2 and 5.10.3 provide a detailed representation of the results.

The OLR results in table 5.1 show that five EFMs (IVC, PhVC, CVC, GG and Accelerators) have a statistically significant relationship with a p-value of  $<0.05$  on the ROE of BG SMEs. The research notes that for every one unit increase in the EFMs that are statistically significant, it is expected that there will be a level of increase in the log odds (See column 2 in table 5.1) in the BG SMEs profitability.

**Table 5.1: Outcome: Relationship between the EFM obtained and ROE**

<b>Construct</b>	<b>One unit increase in EFM leads to the increase in log odds</b>	<b>p-value</b>	<b>Result</b>
<b>ROE</b>			
Crowdfunding → ROE	**	0.462	Not significant
IVC → ROE	3.23	0.001	<b>Significant</b>
GVC → ROE	**	0.781	Not significant
PhVC → ROE	5.27	0	<b>Significant</b>
CVC → ROE	2.89	0.001	<b>Significant</b>
Bank → ROE	**	0.348	Not significant
GG → ROE	2.05	0.036	<b>Significant</b>
BA → ROE	**	0.892	Not significant
Accelerators → ROE	2.49	0.018	<b>Significant</b>
PF → ROE	**	0.147	Not significant
<b>ROA</b>			
Crowdfunding → ROA	**	0.159	Not significant
IVC → ROA	3.47	0	<b>Significant</b>
GVC → ROA	**	0.363	Not significant
PhVC → ROA	5.454	0	<b>Significant</b>
CVC → ROA	3.119	0	<b>Significant</b>
Bank → ROA	**	0.165	Not significant
GG → ROA	**	0.182	Not Significant
BA → ROA	**	0.9	Not significant
Accelerators → ROA	2.183	0.031	<b>Significant</b>
PF → ROA	**	0.724	Not significant

<b>Market Share</b>			
Crowdfunding→Mkt Share	-2.365	0.016	<b>Significant</b>
IVC → Market Share	2.437	0.006	<b>Significant</b>
GVC → Market Share	-2.552	0.029	<b>Significant</b>
PhVC → Market Share	**	0.272	Not significant
CVC → Market Share	**	0.23	Not significant
Bank → Market Share	**	0.243	Not significant
GG → Market Share	**	0.524	Not Significant
BA → Market Share	**	0.797	Not significant
Accelerators → Market Share	**	0.544	Not significant
PF → Market Share	**	1	Not significant
<hr/>			
<b>meanProfit</b>			
Crowdfunding → meanProfit	**	0.469	Not significant
IVC → meanProfit	3.462	0	<b>Significant</b>
GVC → meanProfit	**	0.787	Not significant
PhVC → meanProfit	5.059	0	<b>Significant</b>
CVC → meanProfit	3.31	0	<b>Significant</b>
Bank → meanProfit	**	0.134	Not significant
GG → meanProfit	**	0.078	Not Significant
BA → meanProfit	**	0.895	Not significant
Accelerators → meanProfit	2.571	0.014	<b>Significant</b>
PF → meanProfit	**	0.144	Not significant

Also, the results in table 5.1 show the relationship between EFMs and ROA and highlights IVC, PhVC, CVC and Accelerators are statistically significant. It can be noted from the results that for every one unit increase in IVC, PhVC, CVC and Accelerator there will be a 3.47, 5.45, 3.12 and 2.18 increase in the log odds respectively.

In the measure of the impact of EFM on the market share of BG SMEs, table 5.1 highlights that crowdfunding, IVC and GVC have statistically positive impact on the market share value of BG SMEs. This implies that utilizing these EFMs is associated with an increase in the market share value of BG SMEs.

For a one unit in crowdfunding the log will see a -2.37 move. There is a positive increase of 2.46 in log per unit increase and -2.55 increase in log odds per unit in IVC and GVC respectively.

The outcome table 5.1 highlights the p-value and value increase per unit on the log odds (Estimates) of EFMs with significant relations on market share of BG SMEs.

The research took the mean of the three profitability measures and analysed the impact of EFM. The results show here in the meanProfit that IVC, PhVC, CVC and Accelerators are statistically significant to the performance of BG SMEs in Nigeria.

Finally, in table 5.1, the results of the meanProfit OLR analysis conducted is highlighted. The mean of the three outcomes of profitability chose in this research were computed using the *computation* tab on SPSS.



#### **5.4.2 Hypotheses testing for the impact relationship between the type of entrepreneurial finance model (EFM) obtained and firm structure**

This research also measured the impact of EFM on the firm structure of BG SMEs. Firm structure in this research includes the management composition and the board composition. Respondents provided information on the changes to management and board compositions as a result of the EFM obtained. This test was done to understand if EFMs influenced the changes to management and board compositions.

Table 5.2 and appendix 5.10.5 measure this impact on management composition. The results and detailed OLR measures are presented also in table 2 and detailed in appendix 5.10.6.

The test on the relationship of EFM on management structure, table 5.1 shows that crowdfunding, banks and accelerators are statistically significant with p-values  $<0.05$ .

**Table 5.2: Outcome: Relationship between the EFM obtained and Firm Structure**

<b>Construct</b>	<b>One unit increase in EFM leads to the increase in log odds</b>	<b>p-value</b>	<b>Result</b>
<b>Management Structure</b>			
Crowdfunding → Management Structure	-3.038	0.003	<b>Significant</b>
IVC → Management Structure	**	0.131	Not significant
GVC → Management Structure	**	0.075	Not significant
Ph → Management Structure	**	0.665	Not significant
CVC → Management Structure	**	0.091	Not significant
Bank → Management Structure	-1.623	0.04	<b>Significant</b>
GG → Management Structure	**	0.105	Not Significant
Businessangels	**	0.348	Not significant
Accelerators → Management Structure	-2.008	0.033	<b>Significant</b>
PF → Management Structure	**		Not significant
<b>Board Structure</b>			
Crowdfunding → Board Structure	-4.011	0	<b>Significant</b>
IVC → Board Structure	**	0.154	Not significant
GVC → Board Structure	-3.622	0.003	<b>Significant</b>
Ph → Board Structure	**	0.883	Not significant
CVC → Board Structure	**	0.101	Not significant
Bank → Board Structure	**	0.149	Not significant
GG → Board Structure	-2.422	0.01	<b>Significant</b>
BA → Board Structure	**	0.822	Not significant
Accelerators → Board Structure	-2.482	0.013	<b>Significant</b>
PF → Board Structure	**	**	Not significant

Also, in table 5.2, the relationship impact between EFMs and board structure reflect a statistical significance of crowdfunding, GVC, GG and accelerators at 0.000, 0.003, 0.010 and 0.013 p-values respectively. This means that these EFMs had a statistically significant impact on the board composition of BG SMEs.

This research demonstrated that certain EFMs, such as crowdfunding, banks, accelerators, GVC, and government grants, had meaningful and statistically significant effects on both management and board structures within BG SMEs in Nigeria. This suggests that the choice to utilize these EFMs could lead to substantial changes in how BG SMEs are managed and invariably their performance. The impact on the management and board compositions signifies that these EFMs have been linked to BG SMEs' management teams being changed alongside changes and additions to the board of directors. The initial literature conflicts with the results presented here, however, Coakley et al. (2021) notes that the nominee account equity crowdfunding exists which operational model allows crowd investors some formal legal ownership and governance roles. These provides an indication as to the possible impact crowdfunding has on BG SME firm structure.

### **5.4.3 Hypotheses Testing of Moderators**

#### **5.4.3.1 Hypotheses testing of the moderating effect of management experience on profitability**

This research aimed to measure the moderating effect of management experience on the relationship between EFMs and various performance indicators of BG SMEs in Nigeria. Measuring the moderating effect on profitability implies that the relationship between the independent variable (EFM) and the dependent variable (ROE, ROA,

market share, SROI, management composition and board composition) can be affected or influenced by management experience.

The results of the effects of management experience on profitability metrics (ROE, ROA and Market Share) are presented in table 5.3.

The test of the moderating effect on the relationship between EFM and ROE showed that several EFMs had statistically significant positive effects when combined with management experience. The significant EFMs included IVC, PhVC, CVC, bank, GG, accelerators, and PF. The results indicate that PhVC had the highest impact rate on log odds for every unit of PhVC added, suggesting it had a particularly strong influence on ROE in the presence of management experience.

Similarly, on the relationship between EFM and ROA of BG SMEs, management experience had a statistically significant positive influence on certain EFMs. The statistically significant EFMs included crowdfunding, IVC, PhVC, CVC, banks, GG, and accelerators. This means that when BG SMEs combined these EFMs obtained with management experience, they experienced notable improved effects on their ROA. In simpler terms, when BG SMEs utilized these specific EFMs and combined them with management experience, they observed positive increases in their ROA (Return on Assets). Essentially, management experience played a crucial role in leveraging these EFMs to enhance their financial performance and overall profitability.

The moderating effect on the market share showed that only IVC was statistically significant (see table 5.3). This implies that management experience had a specific influence on the relationship between IVC and market share.

The findings suggest that management experience can significantly moderate the impact of different EFMs on the profitability of BG SMEs.

**Table 5.3: Outcome: Moderating Effect of Management Experience on the Relationship between the EFM obtained and Profitability**

Construct	One unit increase in EFM leads to the increase in log odds	p-value	Result
<b>Moderating Effect on ROE</b>			
Crowdfunding → Mgt Experience → ROE	**	0.193	Not significant
IVC → Mgt Experience → ROE	3.989	0	<b>Significant</b>
GVC → Mgt Experience → ROE	**	0.543	Not significant
PhVC → Mgt Experience → ROE	5.44	0	<b>Significant</b>
CVC → Mgt Experience → ROE	3.469	0	<b>Significant</b>
Bank → Mgt Experience → ROE	1.881	0.046	<b>Significant</b>
GG → Mgt Experience → ROE	2.679	0.008	<b>Significant</b>
BA → Mgt Experience → ROE	**	0.199	Not significant
Accelerators → Mgt Experience → ROE	2.885	0.008	<b>Significant</b>
PF → Mgt Experience → ROE	**	0.193	Not significant
<b>Moderating Effect on ROA</b>			
Crowdfunding → Mgt Experience → ROA	2.171	0.041	<b>Significant</b>
IVC → Mgt Experience → ROA	4.139	0	<b>Significant</b>
GVC → Mgt Experience → ROA	**	0.14	Not significant
PhVC → Mgt Experience → ROA	5.585	0	<b>Significant</b>
CVC → Mgt Experience → ROA	3.659	0	<b>Significant</b>
Bank → Mgt Experience → ROA	2.091	0.019	<b>Significant</b>
GG → Mgt Experience → ROA	**	0.061	Not significant
BA → Mgt Experience → ROA	**	0.262	Not significant
Accelerators → Mgt Experience → ROA	2.549	0.014	<b>Significant</b>
PF → Mgt Experience → ROA	**	0.986	Not significant
<b>Moderating Effect on Market Share</b>			
Crowdfunding → Mgt Experience → Market Share	**	0.092	Not significant
IVC → Mgt Experience → Market Share	3.192	0.001	<b>Significant</b>
GVC → Mgt Experience → Market Share	**	0.16	Not significant
PhVC → Mgt Experience → Market Share	**	0.298	Not significant
CVC → Mgt Experience → Market Share	**	0.119	Not significant
Bank → Mgt Experience → Market Share	**	0.911	Not significant
GG → Mgt Experience → Market Share	**	0.99	Not significant
BA → Mgt Experience → Market Share	**	0.392	Not significant
Accelerators → Mgt Experience → Market Share	**	0.762	Not significant
PF → Mgt Experience → Market Share	**	0.652	Not significant

#### **5.4.3.2 Hypotheses testing of the moderating effect of management experience on firm structure**

The analysis for the moderating effect management experience has on the relationship between EFMs and management composition and board composition is reflected in table 5.4.

The analysis revealed that crowdfunding and accelerators had a statistically significant effect on management composition with p-values of 0.003 and 0.015, respectively. This suggests that these specific EFMs, when combined with management experience, would lead to a change in the composition of management teams within BG SMEs. The analysis shows that both crowdfunding and accelerators, when utilized along with management experience, would directly cause a change in the firm structure and makeup of management teams in BG SMEs.

The findings also indicated that crowdfunding, GVC, CVC, GG, and accelerators were statistically significant when considering the moderating variable (management experience) on the relationship between EFMs and board structure of BG SMEs. This implies that these EFMs, when combined with management experience, had a notable impact on the composition of boards within BG SMEs in Nigeria. The analysis shows that these EFMs, when utilized along with management experience, would directly cause a change in the firm structure and makeup of the board in BG SMEs.

In summary, Table 5.4 demonstrates that certain EFM, such as crowdfunding and accelerators, had a statistically significant effect on both management composition and board composition when considering the moderating influence of management experience. This simply means that BG SMEs would experience a change (removal or addition) of their management and board compositions when the access specific types

of EFMs and combined with management experience as a moderating variable. Additionally, for board composition, the statistical significance extended to other EFMs, including GVC, CVC, GG, and accelerators. These results highlight the importance of management experience in shaping the relationship between EFMs and the firm structures of BG SMEs. It suggests that the combination of specific EFMs and experienced management can lead to meaningful changes in the management and board compositions of these BG SMEs, which may have implications for their overall performance and growth.



**Table 5.4: Outcome: Moderating Effect of Management Experience on the Relationship between the EFM obtained and Firm Structure**

<b>Construct</b>	<b>One unit increase in EFM leads to the increase in log odds</b>	<b>p-value</b>	<b>Result</b>
<b>Moderating Effect on Management Structure</b>			
Crowdfunding → Mgt Experience → Mgt Structure	-3.079	0.003	<b>Significant</b>
IVC → Mgt Experience → Mgt Structure	**	0.139	Not significant
GVC → Mgt Experience → Mgt Structure	**	0.197	Not significant
PhVC → Mgt Experience → Mgt Structure	**	0.464	Not significant
CVC → Mgt Experience → Mgt Structure	**	0.121	Not significant
Bank → Mgt Experience → Mgt Structure	**	0.053	Not significant
GG → Mgt Experience → Mgt Structure	**	0.111	Not significant
BA → Mgt Experience → Mgt Structure	**	0.314	Not significant
Accelerators → Mgt Experience → Mgt Structure	-2.314	0.015	<b>Significant</b>
PF → Mgt Experience → Mgt Structure	**	**	Not significant
<b>Moderating Effect on Board Structure</b>			
Crowdfunding → Mgt Experience → Board Structure	-4.645	0	<b>Significant</b>
IVC → Mgt Experience → Board Structure	**	0.074	Not significant
GVC → Mgt Experience → Board Structure	-3.709	0.005	<b>Significant</b>
PhVC → Mgt Experience → Board Structure	**	0.539	Not significant
CVC → Mgt Experience → Board Structure	-1.935	0.037	<b>Significant</b>
Bank → Mgt Experience → Board Structure	**	0.06	Not significant
GG → Mgt Experience → Board Structure	-3.009	0.003	<b>Significant</b>
BA → Mgt Experience → Board Structure	**	0.306	Not significant
Accelerators → Mgt Experience → Board Structure	-3.086	0.004	<b>Significant</b>
PF → Mgt Experience → Board Structure	**	**	Not significant

#### **5.4.3.3 Hypotheses testing of the moderating effect of firm size on profitability**

The other moderating variable measured in this research is the firm size. The firm size is measured to evaluate how a firm size can influence the profitability, firm structure and SROI of a BG SME in Nigeria that has obtained an EFM. The literature review defined the firm size with reference to SMEDAN's definition of SMEs. Firm size is measured using the employee size and the annual turnover. These have been taken into account and presented in the tables below.

In table 5.5 the moderating effect of employee size and annual turnover (firm size) on the relationship of EFM and ROE notes that crowdfunding, IVC, PhVC, CVC, bank, GG, accelerators, and PF are statistically significant.

In table 5.5, the results show that crowdfunding, IVC, PhVC, CVC, bank, and accelerators are statistically significant.

The analysis show that in measuring the moderating effect of firm size on the relationship between EFMs and market share, only IVC is statistically significant (see table 5.5).

The test of parallel lines are results generated by SPSS when conducting OLR- analysis. The outcomes represent the test of proportional odds assumption of the regression model (Kleinbaum & Ananth, 1997).

This research accepts the models with a Chi-Square  $>0.05$  (Ari & Yildiz, 2016).

**Table 5.5: Outcome: Moderating Effect of Firm Size (Employee size and Annual Turnover) on the Relationship between the EFM obtained and Profitability**

Construct	One unit increase in EFM leads to the increase in log odds	p-value	Result
<b>Firm Size on ROE</b>			
Crowdfunding → Firm Size → ROE	2.369	0.047	<b>Significant</b>
IVC → Firm Size → ROE	4.666	0	<b>Significant</b>
GVC → Firm Size → ROE	**	0.182	Not significant
PhVC → Firm Size → ROE	6.644	0	<b>Significant</b>
CVC → Firm Size → ROE	4.349	0	<b>Significant</b>
Bank → Firm Size → ROE	1.96	0.045	<b>Significant</b>
GG → Firm Size → ROE	3.885	0.001	<b>Significant</b>
BA → Firm Size → ROE	**	0.108	Not significant
Accelerators → Firm Size → ROE	2.821	0.011	<b>Significant</b>
PF → Firm Size → ROE	3.699	0.017	<b>Significant</b>
<b>Firm Size on ROA</b>			
Crowdfunding → Firm Size → ROA	2.146	0.048	<b>Significant</b>
IVC → Firm Size → ROA	4.433	0	<b>Significant</b>
GVC → Firm Size → ROA	**	0.193	Not significant
PhVC → Firm Size → ROA	6.35	0	<b>Significant</b>
CVC → Firm Size → ROA	4.114	0	<b>Significant</b>
Bank → Firm Size → ROA	1.763	0.05	<b>Significant</b>
GG → Firm Size → ROA	**	0.093	Not significant
BA → Firm Size → ROA	**	0.167	Not significant
Accelerators → Firm Size → ROA	2.149	0.038	<b>Significant</b>
PF → Firm Size → ROA	**	0.913	Not significant
<b>Firm Size on Market Share</b>			
Crowdfunding → Firm Size → Market Share	**	0.146	Not significant
IVC → Firm Size → Market Share	2.86	0.003	<b>Significant</b>
GVC → Firm Size → Market Share	**	0.179	Not significant
PhVC → Firm Size → Market Share	**	0.223	Not significant
CVC → Firm Size → Market Share	**	0.091	Not significant
Bank → Firm Size → Market Share	**	0.969	Not significant
GG → Firm Size → Market Share	**	0.391	Not significant
BA → Firm Size → Market Share	**	0.708	Not significant
Accelerators → Firm Size → Market Share	**	0.756	Not significant
PF → Firm Size → Market Share	**	0.487	Not significant

#### 5.4.3.4 Hypotheses testing of the moderating effect of firm size on firm structure

Table 5.6 presents the results of the moderating effects of employee size and annual turnover (firm size) on the relationship between EFMs and both board structure and management structure of BG SMEs. Here are the key findings:

**Board Structure:** The analysis revealed that crowdfunding, GVC, CVC, and accelerators were statistically significant when considering the moderating effects of employee size and annual turnover on the relationship between EFMs and board structure of BG SMEs (see table 5.6). This means that the impact of these EFMs on the board structure of BG SMEs in Nigeria is influenced by the size of the workforce (employee size) and the firm's annual turnover (firm size). This finding suggests that the context in which BG SMEs operate in terms of their size and financial performance plays a crucial role in determining how EFMs, such as crowdfunding, GVC, CVC, and accelerators, influence their board structure. Companies with different workforce sizes and annual turnovers would experience different effects or outcomes on their board composition when they utilize these EFMs.

**Management Structure:** For management structure, the results indicated that crowdfunding, IVC (Independent Venture Capital), CVC (Corporate Venture Capital), and accelerators were statistically significant when considering the moderating effects of employee size and annual turnover on the relationship between EFMs and management structure of BG SMEs (see table 5.6). This suggests that the effects of these specific EFMs on the management structure of SMEs in Bulgaria are influenced by the size of the workforce and the firm's annual turnover.

In summary, Table 5.6 demonstrates that certain EFMs, such as crowdfunding, GVC, IVC, CVC, and accelerators, had statistically significant effects on both board structure

and management structure when considering the moderating effects of employee size and annual turnover (firm size). These findings indicate that the relationship between these EFMs and the firm structures of BG SMEs is contingent on the size of the workforce and the firm's annual turnover.

**Table 5.6: Outcome: Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Firm Structure**

<b>Construct</b>	<b>One unit increase in EFM leads to the increase in log odds</b>	<b>p-value</b>	<b>Result</b>
<b>Firm Size on Board Structure</b>			
Crowdfunding → Firm Size → Board Structure	-4.052	0	<b>Significant</b>
IVC → Firm Size → Board Structure	**	0.067	Not significant
GVC → Firm Size → Board Structure	-3.772	0.009	<b>Significant</b>
PhVC → Firm Size → Board Structure	**	0.462	Not significant
CVC → Firm Size → Board Structure	-1.808	0.04	<b>Significant</b>
Bank → Firm Size → Board Structure	**	0.386	Not significant
GG → Firm Size → Board Structure	**	0.197	Not significant
BA → Firm Size → Board Structure	**	0.309	Not significant
Accelerators → Firm Size → Board Structure	-2.197	0.033	<b>Significant</b>
PF → Firm Size → Board Structure	**	**	Not significant
<b>Firm Size on Management Structure</b>			
Crowdfunding → Firm Size → Mgt. Structure	-2.52	0.023	<b>Significant</b>
IVC → Firm Size → Mgt. Structure	2.939	0.002	<b>Significant</b>
GVC → Firm Size → Mgt. Structure	**	0.695	Not significant
PhVC → Firm Size → Mgt. Structure	**	0.41	Not significant
CVC → Firm Size → Mgt. Structure	1.868	0.022	<b>Significant</b>
Bank → Firm Size → Mgt. Structure	**	0.431	Not significant
GG → Firm Size → Mgt. Structure	**	0.748	Not significant
BA → Firm Size → Mgt. Structure	**	0.86	Not significant
Accelerators → Firm Size → Mgt. Structure	-2.054	0.038	<b>Significant</b>
PF → Firm Size → Mgt. Structure	**	**	Not significant

## 5.5 Confirmatory Factor Analysis (CFA) and Model Measurement

The CFA has been used in this research to further evaluate the impact of EFM on BG SMEs in Nigeria. The CFA has been used to determine several statistical measures including to determine the fitness indexes of the model that is being measured (Byrne, 2010). The CFA test was run on the SPSS Amos 26 version.

This research adopts recommendations of Hair et al. (2010) to utilise a minimum of one fitness index from one of three model fit classifications – absolute fit, incremental fit and parsimonious fit. In measuring these indexes, there are acceptable levels recommended (see table 5.7 below) (Gaskin & Lim, 2016).

**Table 5.7: CFA Acceptable Criteria**

Category	Index	Full name of index	Acceptable
Absolute fit	Chi-Square	Discrepancy Chi Square	$p \geq 0.05$
	RMSEA	Root Mean Square of Error Approximation	$\leq 0.08$
	GFI	Goodness of Fit Index	$\geq 0.80$
Incremental fit	AGFI	Adjusted Goodness of Fit	$\geq 0.80$
	CFI	Comparative Fit Index	$\geq 0.90$
	TLI	Tucker-Lewis Index	$\geq 0.90$
	NFI	Normed Fit Index	$\geq 0.90$
Parsimonious fit	Chisq/df	Chi Square/Degrees of freedom	$< 5.0$
	P Close	P Close	$> 0.05$

Source: (Gaskin & Lim, 2016; Schumacher et al., 2013; Hair et al., 2010)

Based on the acceptable measures of the indexes highlighted in table 5.7, the goodness of fit measures in this research were acceptable, indicating that the model reasonably fits the data. The model examines the relationship between the different EFMs and profitability and firm structure. The results of the fitness are shown in table 5.8 below.

**Table 5.8: Goodness of Fit for the Relationship Model using CFA**

Index	Acceptable	EFMs Obtained									
		C.funding	IVC	GVC	PhVC	CVC	Bank	GG	BA	Acce	PF
Chi-Squar	$p \geq 0.05$	0.86		0.17	0.006	0.03	0.54	0.19	0.19	0.57	0.09
RMSEA	$\leq 0.08$	0.06		0.048	0.09	0.08	0.00	0.05	0.05	0.00	0.06
GFI	$\geq 0.80$	0.98		0.98	0.98	0.98	0.99	0.98	0.99	0.99	0.99
AGFI	$\geq 0.80$	0.95		0.96	0.93	0.94	0.98	0.96	0.96	0.98	0.96
CFI	$\geq 0.90$	0.99		0.99	0.97	0.98	1.00	0.99	0.99	1.00	0.99
TLI	$\geq 0.90$	0.97		0.98	0.94	0.96	1.01	0.99	0.98	1.00	0.97
NFI	$\geq 0.90$	0.97		0.98	0.95	0.97	0.99	0.98	0.99	0.99	0.97
Chisq/df	$< 5.0$	1.92		1.54	3.23	2.53	0.85	1.47	1.49	0.77	1.87
P Close	$> 0.05$	0.302		0.45	0.06	0.15	0.79	0.48	0.47	0.81	0.32

While most of the goodness-of-fit tests showed good and acceptable fit, there were a couple of exceptions. Table 5.8 shows that the p-value for the EFM CVC is below the acceptable 0.05, suggesting that this EFM's relationship with profitability and firm structure was statistically significant. The RMSEA for PhVC is 0.09 which is 0.01 more than the recommended fitness (usually around 0.08 or lower). All other goodness of fit tests shows a good and acceptable fit which shows the CFA measurement fits the model of this research.

In addition to the hypothesis testing done using Ordinary Least Squares Regression (OLR), the research also employed Confirmatory Factor Analysis (CFA) to evaluate the performance of BG SMEs that have obtained one or more EFM. The findings on profitability are presented in the following sections.

#### 5.5.1 CFA Test of Hypotheses testing

research conducted separate CFA tests for each EFM individually to assess their relationship with profitability for BG SMEs in Nigeria. The regression weightings are presented in table 5.9 for the relationship between EFM and profitability. Here are the key findings from Table 5.9:

**CFA Test Results for Profitability:** The CFA test results showed that crowdfunding, PhVC (Private Venture Capital), CVC (Corporate Venture Capital),



Bank, and BA (presumably, Business Angels) had statistically significant regression weightings with a p-value of < 0.05. This indicates that these specific EFMs had a significant and positive relationship with profitability for BG SMEs.

**Table 5.9: CFA Results of Hypotheses Test on the Relationship between EFMs and Profitability**

Construct	Estimate	S.E.	C.R.	P	Result
Crowdfunding → Profitability	-24.663	12.821	-1.924	0.054	<b>Significant</b>
GVC → Profitability	-40.98	25.339	-1.617	0.106	Not Significant
PhVC → Profitability	14.593	3.98	3.666	***	<b>Significant</b>
CVC → Profitability	3.853	0.746	5.167	***	<b>Significant</b>
Bank → Profitability	-5.077	1.119	-4.538	***	<b>Significant</b>
GG → Profitability	-36.007	36.526	-0.986	0.324	Not Significant
BA → Profitability	-13.547	4.383	-3.091	0.002	Significant
Accelerator → Profitability	139.518	432.127	0.323	0.747	Not Significant
PF → Profitability	-106.448	134.538	-0.791	0.429	Not Significant

\* significant at p= 0.05

The statistically significant regression weightings for crowdfunding, PhVC, CVC, Bank, and BA suggest that these EFMs played a significant role in influencing the profitability of BG SMEs. This information provides valuable insights into the specific

financial mechanisms that have a positive impact on the profitability of BG SMEs and can help inform decision-making for businesses and policymakers in the region.

Table 5.10 indicates that PhVC, CVC, Bank and BA are statistically significant in the EFM relationship with firm structure. These independent variables are statistically significant at  $p$  value  $< 0.05$ , suggesting that they had a significant influence on the firm structure of BG SMEs.

The results in Table 5.10 provide valuable insights into the specific EFMs that have a significant impact on the firm structure of BG SMEs. PhVC, CVC, Bank, and BA are identified as key drivers affecting the board and management structure of these BG SMEs. This information can be crucial for entrepreneurs, investors, and policymakers looking to understand how different EFMs shape the firm structure and governance of BG SMEs in the Nigerian market.

**Table 5.10: CFA Results of Hypotheses Test on the Relationship between EFMs and Firm Structure**

<b>Construct</b>	<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>	<b>Result</b>
Crowdfunding → Firm structure	-10.917	6.02	-1.813	0.07	Not Significant
IVC → Firm structure					
GVC → Firm structure	-18.054	11.653	-1.549	0.121	Not Significant
PhVC → Firm structure	6.315	2.095	3.014	0.003	Significant
CVC → Firm structure	1.783	0.472	3.776	***	Significant
Bank → Firm structure	-2.258	0.647	-3.49	***	Significant
GG → Firm structure	-16.082	16.582	-0.97	0.332	Not Significant
BA → Firm structure	-6.082	2.26	-2.691	0.007	Significant
Accelerator → Firm structure	61.776	191.675	0.322	0.747	Not Significant
PF → Firm structure	-47.51	60.684	-0.783	0.434	Not Significant

\* significant at  $p = 0.05$

Relationships between each EFM and profitability and firm structure have been reflected and presented in appendix 5.11.1 – appendix 5.11.10. The CFA diagrams include the standard regression weights for the relationships between the independent variables and the dependent variables.

The CFA analysis evaluates the impact of each EFM on the profitability and firm structure of BG SMEs. The analysis measures ROE, ROA and the market share of BG SMEs, and measures the management composition under firm structure.

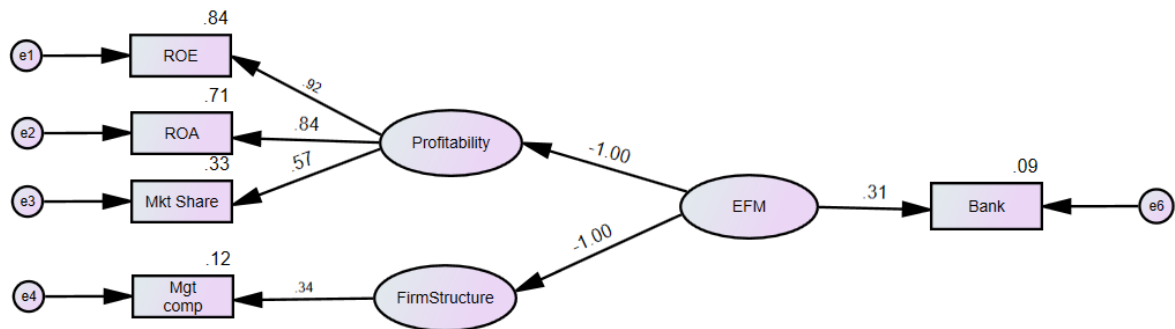
The core hypotheses were measured using the CFA and do not include the moderating variables.

#### **5.5.1.1 Direct Relationship between Crowdfunding and Profitability and Firm Structure**

Appendix 5.11.1 reflects the CFA model measuring the relationship and impact of crowdfunding on the profitability and firm structure of BG SMEs. The factor loading estimates between the observed variables (profitability and firm structure) and the individual outcomes (ROA, ROE, Mkt share and Mgt. comp) are acceptable. The weights are <1 and closer to .70.

The results for this model show that crowdfunding does not have a significant impact on BG SMEs' profitability and firm structure. Based on the analysis and key findings, there is no substantial evidence that supports the idea that crowdfunding has a positive significant effect on the profitability and firm structure of BG SMEs.

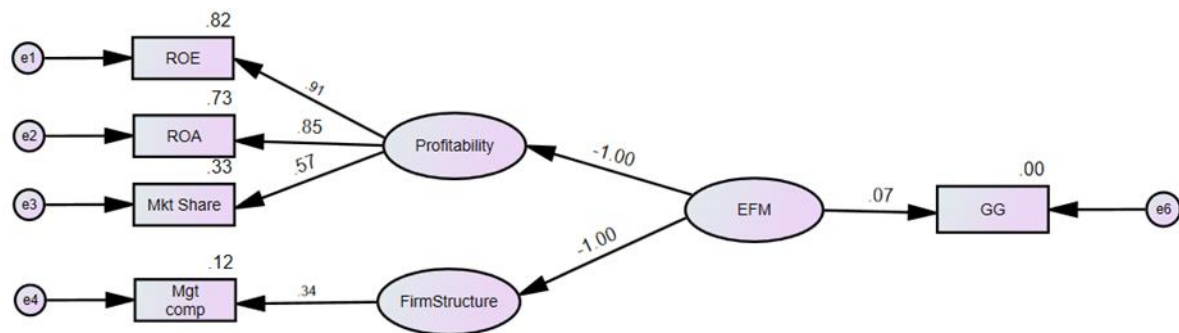
### 5.5.1.2 Direct Relationship between Bank and Profitability and Firm Structure



Bank relationship with BG SMEs' profitability and firm structure is significant at  $<0.05$ . The key findings here suggests that the impact of bank EFM on BG SMEs is statistically significant and does not appear to have happened randomly or by chance.

The PClose value of 0.79 highlights a goodness of fit of the CFA model designed. In CFA, the PClose value (also known as the p-value for close fit) is used to assess the goodness of fit of the model to the data. A PClose value close to 1.0 indicates that the model fits the data well. In this case, a PClose value of 0.79 suggests that the CFA model designed fits the observed data reasonably well, indicating that the model adequately represents the relationships between the observed variables and the underlying latent constructs.

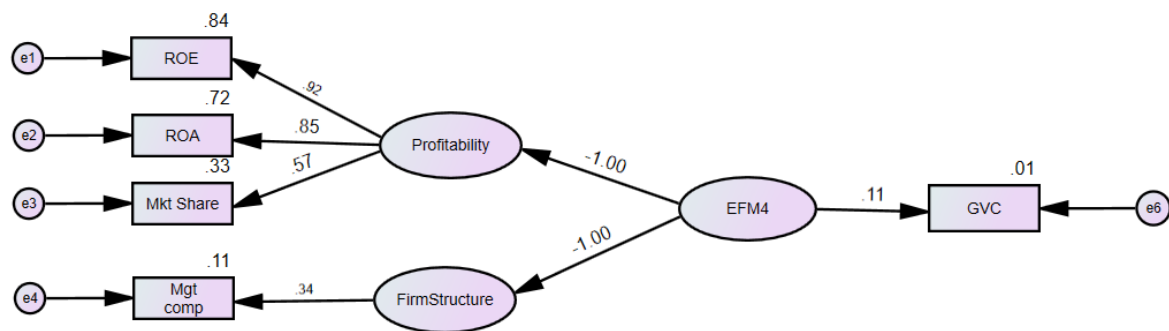
### 5.5.1.3 Direct Relationship between Government Grant and Profitability and Firm Structure



The factor loadings for this model are within an acceptable range. This suggests that the observed variables (profitability and firm structure) are reasonably associated with the latent constructs (GG) being measured in the model. A well-fitting model with acceptable factor loadings indicates that the model's structure adequately represents the relationships between the variables.

The GG model with a p-value of .121 does not impact on the profitability and firm structure of BG SMEs. The p-value does not show a significant impact on the profitability and firm structure of BG SMEs. A p-value above the conventional significance level of 0.05 indicates weak statistical evidence to support the idea that the GG model has a significant effect on the profitability and firm structure of these BG SMEs.

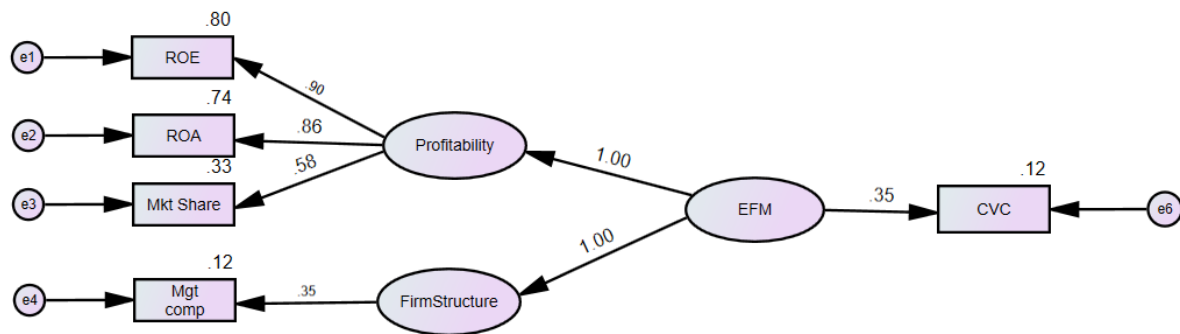
#### 5.5.1.4 Direct Relationship between Government Venture Capital and Profitability and Firm Structure



This research finds that GVC source of financing is not significant in relation to the profitability and firm structure of BG SMEs with a P value greater than 0.05. The factor loadings are within the acceptable range of 1 and around 0.7.

The factor loadings represent the strength of the relationships between observed variables and latent constructs in a statistical model like CFA. As indicated previously, a factor loading of 1 indicates a perfect relationship between the observed variable and the underlying construct, while factor loadings around 0.7 are considered moderate and still indicate a reasonably strong relationship.

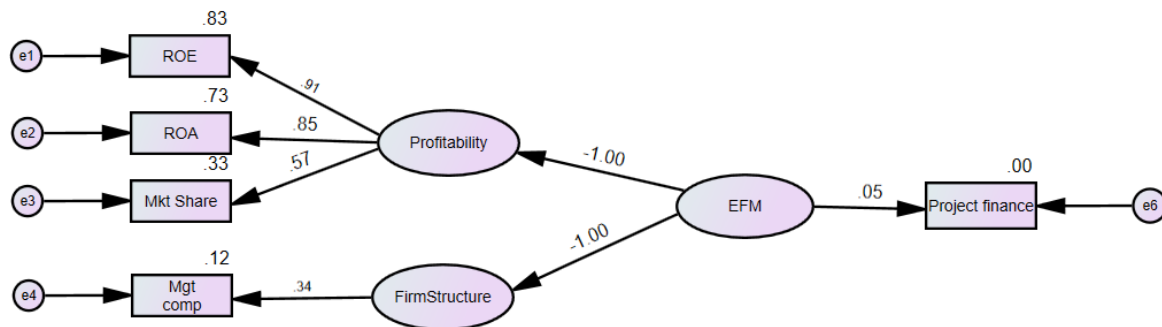
### 5.5.1.5 Direct Relationship between Corporate Venture Capital and Profitability and Firm Structure



The CVC EFM has appropriate factor loadings as shown in appendix 5.11.5. The factor loadings outcomes imply that the observed variables in the CVC EFM are well-correlated with the latent constructs they represent, indicating a good fit of the model to the data. This research finds that there is a significant relationship between CVC and profitability, and CVC and firm structure. This research finds strong statistical evidence that is consistent with the research hypotheses that CVC financing has a positive impact on the profitability and firms' structure of BG SMEs in Nigeria.

The key findings suggest that obtaining CVC financing by BG SMEs is associated with positive effects on the profitability and firm structure. This finding could have important implications for understanding the role of CVC in supporting and influencing the growth and success of BG SMEs in Nigeria.

### 5.5.1.6 Direct Relationship between Project Finance and Profitability and Firm Structure



The project financing external finance does not have a significant impact on the profitability and firm structure of BG SMEs. This invariably means that the research did not find strong statistical evidence to support a significant relationship between project financing and the profitability and firm structure of the BG SMEs.

The CFA model construct meets all goodness of fit checks with the Chi-Square being greater than 0.05. In CFA, the Chi-Square test is used to assess the goodness of fit, and a p-value greater than 0.05 indicates that the model fits the observed data well, suggesting that it adequately represents the relationships between the observed variables and the latent constructs being studied.



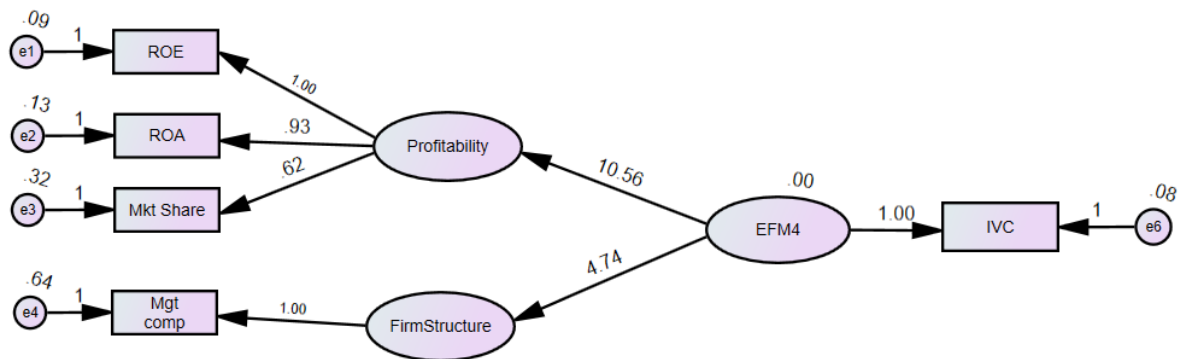
#### **5.5.1.7 Direct Relationship between Business Angels and Profitability and Firm Structure**

Appendix 5.11.7 measures the direct relationship and impact of BA on the profitability and firm structure of BG SMEs. The diagram highlights the link and reflects the weightings of the dependent variable and exogenous variables.

The Chi-square for the variable is greater than .05 which is acceptable. The outcome indicates that the Chi-square test for the model's goodness of fit shows a p-value greater than 0.05. In SEM, a higher p-value for the Chi-square test indicates a better fit of the model to the data. Thus, the model's goodness of fit is considered acceptable in this case, suggesting that the model adequately represents the relationships between the variables.

The results show that BA has a significant impact on the profitability and firm structure of BG SMEs in Nigeria. The key findings here suggests that BA EFM plays a meaningful role in influencing the financial performance and firm structure of BG SMEs in Nigeria. The findings is consistent and accepted that BA EFM has a significant positive effect on the profitability of BG SMEs.

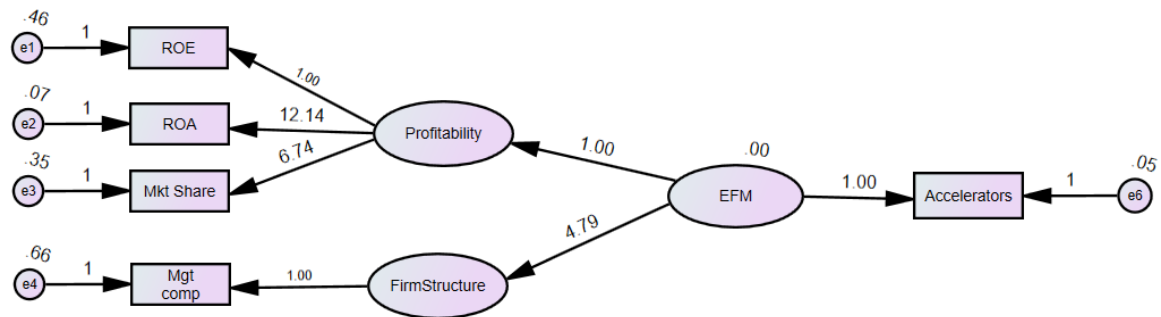
### 5.5.1.8 Direct Relationship between Independent Venture Capital and Profitability and Firm Structure



The factor loading for this model is in the acceptable range of  $<1$  however, IVC as measured does not impact the profitability and firm structure of BG SMEs. Factor loadings in this range indicate a reasonably strong relationship between the observed variables and the underlying latent construct (IVC).

This research findings suggest that IVC does not have a significant impact on the profitability and firm structure of BG SMEs. This means that there is weak statistical evidence to support the idea that IVC EFM has a meaningful effect on the financial performance and firm structure of BG SMEs. The key findings here are not consistent with the research hypotheses and several literature journals examined in this research.

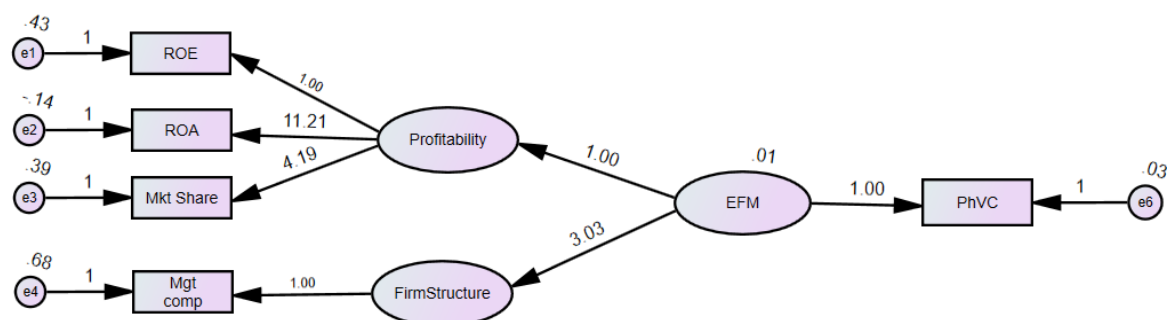
### 5.5.1.9 Direct Relationship between Accelerator and Profitability and Firm Structure



Using the CFA, the relationship between the accelerator model and profitability and firm structure of BG firms was found as not being significant. This implies that the accelerator model, as measured in the research, does not have a meaningful impact on the financial performance and firm structure of the BG SMEs under investigation. The lack of a significant relationship between the accelerator model and profitability and firm structure raises questions about the effectiveness of the accelerator model in enhancing financial performance and firm structure for these BG SMEs.

The factor loading for the standardized estimate is substantially higher than 1. A factor loading higher than 1 is not typical in CFA as it suggests an unusually strong relationship, which raises slight concerns about model fit and interpretation. Factor loadings are expected to be less than 1, typically ranging from -1 to 1, with values closer to 1 indicating stronger relationships between variables and constructs.

### 5.5.1.10 Direct Relationship between Philanthropic Venture Capitals and Profitability and Firm Structure



Appendix 5.11.1 - 5.11.10 show the direct effect of the EFMs on profitability and firm structure. The construct, estimates and measures are presented in Table 5.20. The standard regression weightings presented in tables 5.19 and 5.20 reflect the level of change that has occurred to the dependent variable as a result of changes that have happened on one standard deviation of the independent variable.

This research has thoroughly analysed the direct effects of various EFMs on profitability and firm structure, providing insights into the impact EFMs on the performance and firm structure of BG SMEs.

## 5.6 Summary and Conclusions

In this chapter, the data collected were tested and measured to achieve the aim and objectives of the research. Ordinary logit regression and a CFA were conducted to test the hypotheses using SPSS and AMOS respectively. The results were presented which showed some EFMs obtained by BG SMEs in Nigeria did have significant impact on the financial performance and firm structure of the firms.

The key findings in this research are summarised as follows:

- **Impact on BG SMEs' Profitability:** Independent venture capital, philanthropic venture capital, corporate venture capital, government grants, banks, business angels, crowdfunding, and accelerators all have a positive impact on one or more metrics of profitability for BG SMEs. This suggests that these EFMs contribute positively to the financial performance of BG SMEs.
- **Impact on Firm Structure:** Crowdfunding, banks, government venture capital, government grants, accelerators, philanthropic venture capital, corporate venture capital, and business angels have a statistically significant impact on the firm structure of BG SMEs. This impact leads to changes in the management and board compositions of these BG SMEs.
- **Moderating Influence of Management Experience:** The results shows that management experience plays a moderating role in the relationship between the various funding sources (independent venture capital, philanthropic venture capital, corporate venture capital, banks, government grants, and accelerators) and the profitability metrics of BG SMEs. Additionally, management experience also moderates the interactions between crowdfunding, accelerators, government venture capital, corporate venture capital, and government grants with the firm structure of BG SMEs.
- **Moderating Influence of Firm Size:** The findings indicate that firm size also moderates the relationship between certain EFMs (crowdfunding, independent venture capital, philanthropic venture capital, corporate venture capital, banks, government grants, and accelerators) and BG SMEs' profitability metrics. Moreover, firm size influences the relationship between crowdfunding, government venture capital, corporate venture capital, accelerators, and independent venture capital with the firm structure of BG SMEs. This suggests

that the effects of these funding sources on BG SMEs' financial performance and organizational structure are influenced by the size of the BG SMEs.

- Furthermore, it is noteworthy that despite 46% of the sample size of BG SMEs creating some form of social value, none of these SMEs measure their social return on investment (SROI). This suggests that even though a significant portion of the SMEs contribute to social value, they do not assess or quantify the social impact of their activities in financial terms.

The results were categorised based on the hypotheses and are further discussed in chapter 6 whilst comparing the outcome with similar research in the subject area.

## Chapter 6: Discussion of Findings

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### 6.1 Introduction

This chapter presents and discusses the key findings of the research from the results shown in chapter 5. The findings around the three broad hypotheses are discussed in relation to the research aim and objectives. The research also evaluates the findings in relation to the two main theories underpinning the research, namely, the agency theory and the human capital theory. There are strong indications from the research that quality of the management team and their focus on the BG SME objectives as it aligns to the firm and the fund providers influences the performance of BG SMEs.

The findings in the research reflect that the type of EFM obtained can have an impact on the performance and outcome of BG SMEs in Nigeria.

### 6.2 Primary Findings

This research investigated the impact of EFMs on the performance and outcome of BG SMEs in Nigeria. The results presented were analysed from data survey of 237 BG SMEs in Nigeria using OLR and CFA tests.

Three broad hypotheses were tested:

H1: There is significant dependence between the type of entrepreneurial finance model (EFM) obtained and profitability

H2: There is dependence of firm structure of BG SMEs on EFM

H3: There is dependence between EFM and the social return of investment (SROI) performance of BG SMEs

In the test of the dependence between EFM and profitability, the results indicate a significant relationship between some EFMs obtained and the performance of BG SMEs. Similarly, this research finds a significant relationship between the type of EFM obtained and the firm structure of the BG SMEs. However, the current outcomes testing the SROI performance of BG SMEs that obtained external finance could not be completed. Data obtained notes that SROI were not measured by these BG SMEs in Nigeria and therefore there was no data available to measure this outcome. The findings are presented in table 6.1 and table 6.2 while figure 6.1, 6.2 and 6.3 link the research findings to the principal research questions.

**Table 6.1: Results from Ordinary Logit Regression Analysis**

Summary Results of OLR Findings	Comments
<p>IVC, PhVC, CVC, GG and Accelerators have a significant impact on the ROE of BG SMEs.</p> <p>IVC, PhVC, CVC and Accelerators have a significant impact on the ROA of BG SMEs.</p> <p>Crowdfunding, IVC and CVC have a significant impact on the market share of BG SMEs.</p> <p>In the analysis conducted of the profitability of BG SMEs using the <i>mean</i> of the three profitability outcomes measured (ROE, ROA and market share) the IVC, PhVC, CVC and Accelerators have a significant impact on BG SME.</p>	<p>In addressing the first research question (<i>RQ1</i>), the findings show that some EFMs have a positive impact on the profitability of BG SMEs.</p> <p>In addition, the results address the following hypotheses: <i>H1d</i>, <i>H1e</i> and <i>H1f</i>.</p>
<p>Crowdfunding, Bank and Accelerators have a significant impact on the management structure of BG SMEs.</p> <p>Crowdfunding, GVC, GG and Accelerators have a significant impact on the board structure of BG SMEs.</p>	<p>The findings here are clear and address <i>RQ1</i> and show that some EFMs could lead to a change in the management and or board structure of a BG SME.</p> <p>In addition, the results address the following hypotheses: <i>H1a</i>, <i>H1b</i> and <i>H1c</i>.</p>
<p>Management experience has a moderating influence on the relationship between IVC, PhVC, CVC, Bank, GG and Accelerators and the ROE of BG SMEs.</p> <p>Management experience has a moderating influence on the relationship between</p>	<p>Management experience was measured as a moderator variable, measuring the moderating influence in the relationship between EFM and Profitability (ROE, ROA and market share).</p>



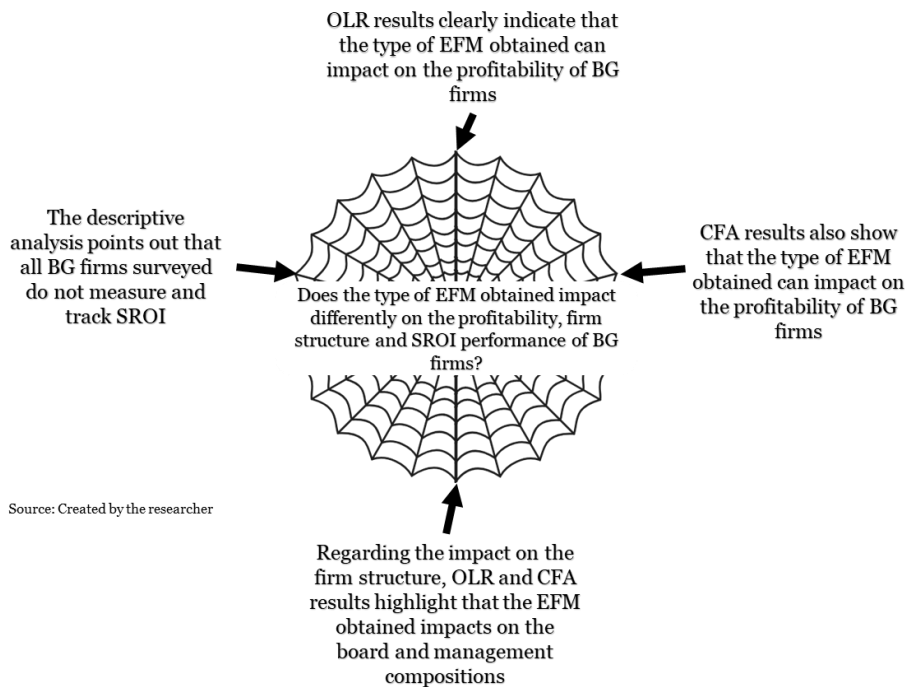
<p>Crowdfunding, IVC, PhVC, CVC, Bank and Accelerators and the ROA of BG SMEs.</p> <p>Management experience has a moderating influence on the relationship between IVC and the market share of BG SMEs.</p>	<p>The findings here address RQ2 and three hypotheses – <i>H1d</i>, <i>H1e</i> and <i>H1f</i>.</p>
<p>Management experience has a moderating influence on the relationship between Crowdfunding and Accelerators and the management structure of BG SMEs.</p> <p>Management experience has a moderating influence on the relationship between Crowdfunding, GVC, CVC, GG and Accelerators and the board structure of BG SMEs.</p>	<p>Hypotheses <i>H2c</i> and <i>H2d</i> were tested to ascertain the moderating influence of management experience in the relationship between EFMs and firms' management and board compositions.</p>
<p>Firm size has a moderating influence on the relationship between Crowdfunding, IVC, PhVC, CVC, Bank, GG, Accelerators and PF and the ROE of BG SMEs.</p> <p>Firm size has a moderating influence on the relationship between Crowdfunding, IVC, PhVC, CVC, Bank, and Accelerators and the ROA of BG SMEs.</p> <p>Firm size has a moderating influence on the relationship between IVC and the market share of BG SMEs.</p>	<p>Firm size was measured as a moderator variable, measuring the moderating influence in the relationship between EFM and Profitability (ROE, ROA and market share).</p> <p>The findings address RQ2 and the following hypotheses: <i>H1g</i>, <i>H1h</i> and <i>H1i</i>.</p>
<p>Firm size has a moderating influence on the relationship between Crowdfunding, GVC, CVC and Accelerators and the board structure of BG SMEs.</p> <p>Firm size has a moderating influence on the relationship between Crowdfunding, IVC, CVC and Accelerators and the management structure of BG SMEs.</p>	<p>Hypotheses <i>H2e</i> and <i>H2f</i> were tested to ascertain the moderating influence of firm size in the relationship between EFMs and firms' management and board compositions.</p>

**Table 6.2: Results from Confirmatory Factor Analysis**

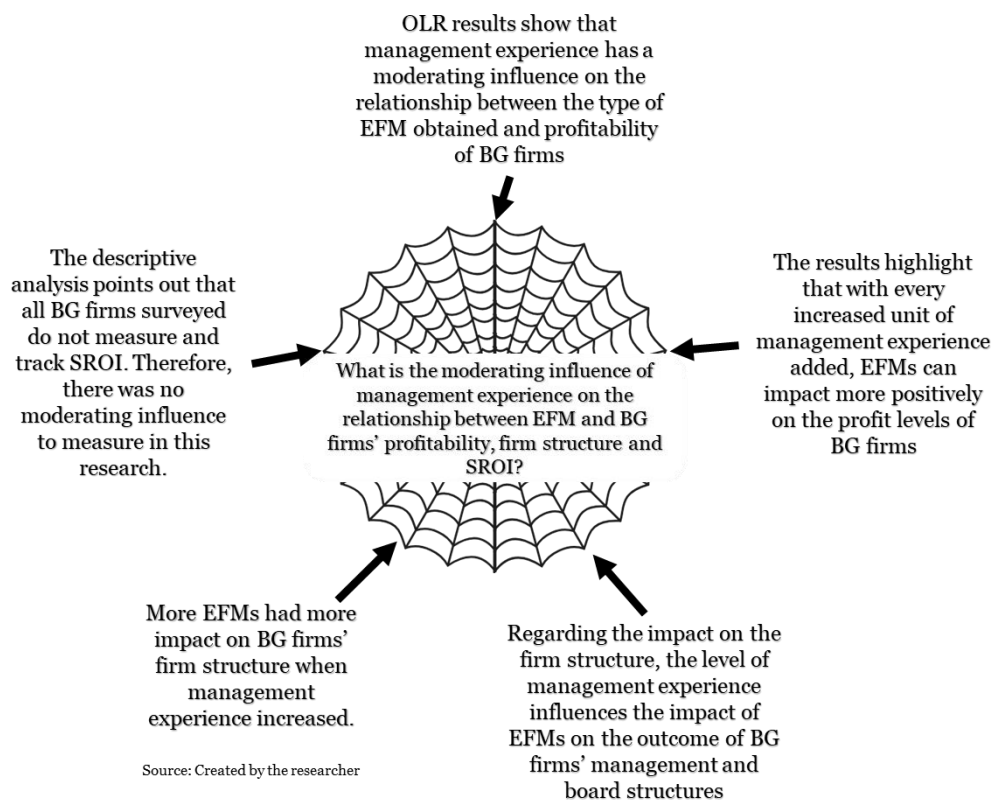
<b>Summary Results of CFA Findings</b>
<p>Crowdfunding, PhVC, CVC, Bank and BA have a significant impact on the profitability of BG SMEs.</p>
<p>PhVC, CVC, Bank and BA have a significant impact on the firm structure of BG SMEs.</p>

The results of the CFA focus on the direct interactions of the EFMs with BG SMEs' profitability and firm structure. The summary findings in Table 6.2 answer the research questions 1 (*RQ1*). They also address the broad hypotheses *H1* and *H2*.

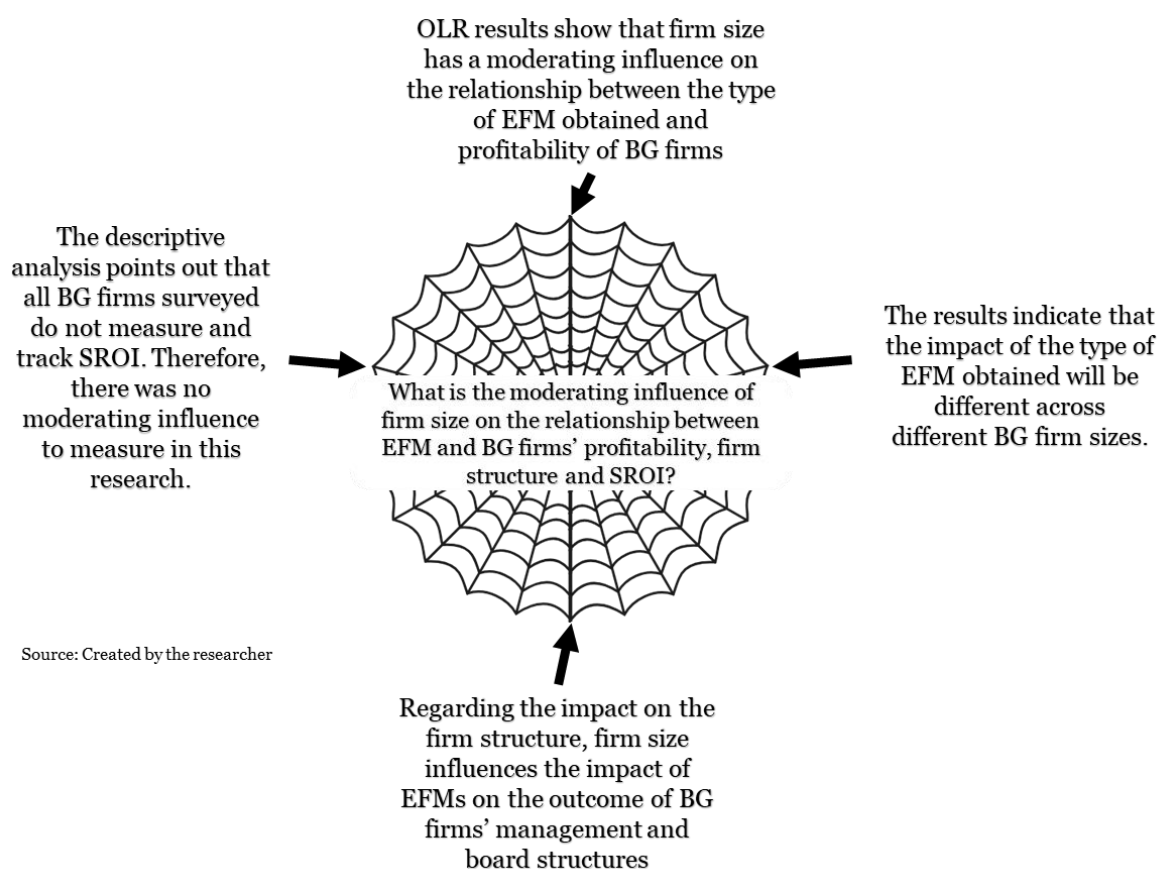
**Figure 6.1: Research Results and the link to RQ1**



**Figure 6.2: Research Results and the link to RQ2**



**Figure 6.3: Research Results and the link to RQ3**



The findings from this research and outlined in figures 6.1, 6.2 and 6.3 note that the type of EFM BG SMEs obtain can impact on their performance. This will mean for BG SMEs to be profitable and maintain the right firm structure, there needs to be more consideration to the type of finance they obtain. The following section explains what these results mean to BG SMEs.

### 6.3 Interpretation of Primary Findings

This research applies caution in the interpretation of the results. The results are from analysis conducted using OLR and CFA. The CFA shows direct relationships with the *mean* dependent variables and the type of EFM obtained. On the other hand, the OLR analysis measures each component of the dependent variable.

### **6.3.1 Relationship between EFMs and BG SMEs' Profitability**

The OLR test conducted highlighted that some EFMs had statistically significant impact on the ROE, ROA and market share performance of BBG SMEs in Nigeria. The CFA conducted also identified EFMs that had significant impact on BG SMEs' profitability (see tables 6.1 and 6.2).

In the OLR test conducted, IVC and CVC had significant positive impact on the ROE, ROA and market share of BG SMEs. In measuring the impact on the mean profit, IVC and CVC also had a significant positive relationship which implies that both EFMs (IVC and CVC) have had a higher influence on profitability of BG SMEs than other EFMs. Dushnitsky & Lenox (2006) in their research agree that CVC investment have significant relationship in the creation of value in firms. In the research model created by Dushnitsky & Lenox (2006) they apply a similar method to this research by studying only firms that had obtained CVC financing. They highlight that the impact contribution of CVC is more on firms that focus on technological growth, whilst the contributions on the financial return on investment is minimal. Dushnitsky & Lenox (2006) acknowledge a growth in both CVC and IVC investment in equity financing which has been historic especially in the early 2000s (see Appendix 6.1.1).

The clear significant positive impact of IVC and CVC affirms the researcher's hypotheses (H1) and draws from the practice of these venture capitals in dealing with agency problems and enhancing their firms' human capital. The research draws from the agency theory and human capital theory. Dong et al. (2021) in their research highlight that where the management team that makes the decisions within a firm is poorly monitored, there are likely to be shortfalls in performance. IVC and CVC use strict covenants and contracts to address principal-agent conflicts of interest whilst

adopting other value-addons to improve the quality and capacity of the decision-makers (management team).

Croce et al. (2013) evaluated the total factor productivity of firms that received venture capital (defined as IVC in this research) highlighted that there is a significant relationship between IVC and firm performance. Their research does not directly measure the same outputs measured in this research; however, the critical evaluation of overall performance has been done to put the overall relationship with firms' performance and the type of EFM they obtain. Croce et al. (2013) research measured the total factor productivity, capital productivity growth and labour productivity.

Similar research also agrees that IVC firms have a positive impact on funded firms but notes that the impact is small (Rosenbusch et al., 2013). They argue that the industry of the firm plays a higher role in determining the success and performance of the firm (Rosenbusch et al., 2013). This research notes that the impact on BG SMEs is significant with every one added unit of IVC leading to an estimated increase of 3.24, 3.4 and 2.44 in the ROE, ROA and market share of BG SMEs respectively. The high estimates allow business managers and owners to project the possible returns they can actualize by funding their operations using IVC.

Guo & Jiang (2013) conducted a regression analysis that assessed the impact of domestic IVC and foreign IVC on firms and found a positive significance between them (both IVC) and the sales growth of firms. Overall, they agree from their findings that firms that receive IVC funding perform better than firms that do not receive IVC funding. However, they note that this could be as a result of strict selection processes that IVC use to select high-potential performing firms. Comparing the performance of firms that received IVC against those that received GVC, Cumming et al. (2017) find

that firms backed by IVC performed better than firms that received GVC. The performance was measured by the number of successful IPOs. Munari & Toschi (2015) have a different outcome of IVCs and show in their research that IVC funded firms have a negative effect on the performance of their investee firms. Kato & Tsoka (2020) measured the sales turnover and ROA of SMEs in Uganda and for that IVC funding had a statistically significant impact on both performance measures. Despite the positive impact, they still note that 20% of IVC funded firms fail. Ollor & Dagogo (2009) agree that IVC backed SMEs in Nigeria perform better than non-IVC backed SMEs and add that these SMEs with IVC backed funding contribute more to the economy through the payment of taxes, improved staff welfare and the provision of social and ethical values.

The outcomes of GVC do not assume a non-significant impact of GVC on firms. Munari & Toschi (2015) point that GVCs impact on firms can be described as modest but still do have a significant impact on the performance of firms. However, the CFA and OLR analysis in this research find that there is no significant dependence between GVC and the profitability of BG SMEs in Nigeria. This confirms the research hypotheses (H1) and is consistent with several research that find that GVC have none or minimal impact on firms' performance. Lerner (2009) in their research refer to GVC financing as a failed EFM. Xia et al. (2019) report that GVC backed firms have lower and slower sales and employee growth, and they would mostly have a negative impact on the firms they invest in. Cumming et al. (2017) argues that the underperformance of GVCs results from their lack of capacity and standing to make independent decisions and negotiate contracts. The research through the human capital theory and relating to the findings of Cumming et al. (217) exposes the weakness of GVC in their knowledge and capacity in managing BG SMEs. Alperovych et al. (2020) add that GVCs that operate

in less developed economies and in regions that suffer high scale corruption do not have any significant impact on the firms they invest in. There is agreement that GVC application differs across different regions, however, there are suggestions that GVCs could have a more significant positive impact on firms if they coinvest with IVCs (Alperovych, et al., 2020).

The results of the OLR and CFA analysis in this research also highlight that PhVC has a significant impact on the *mean* profit of BG SMEs. The statistics show that for BG SMEs that add a unit of PhVC will have an estimated 5.1 log odds increase in profitability. The PhVC from the data has the highest impact on profitability of BG SMEs. The PhVC results are surprising considering the return-on-investment of the EFM highlighted in appendix 1.1. The functioning model of PhVC does not treat finance provided to BA SMEs as charity, however, it treats the finance as an investment geared towards a social goal as the ROI (López & Suojanen, 2019), whilst also generating substantial economic value (Scarlata, et al., 2016). There are indications from the results that PhVC applies IVC monitoring activities efficiently alongside the EFM's quest for social returns. Therefore, the outcome of PhVC and its positive effect on BG SMEs is not consistent with H1.

Crowdfunding is statistically significant and impacts positively on the market share of BG SMEs. The CFA analysis also shows that crowdfunding has a positive impact on profitability. The results are consistent with H1 and is contrary to the findings of Walthoff-Borm et al. (2018). 4.2% of the BG SMEs in the sample size which translates to 10 BG SMEs obtained crowdfunding finance. It has to be noted that, though crowdfunding positively impacts on BG SMEs profitability, the impact is less than IVC and PhVC impact on BG SMEs.

Looking at the structure of crowdfunding, it can be argued that the fund provides *relaxed* funding for BG SMEs to be able to focus on longer term growth. Some literature papers have described the crowdfunding EFM as *democratising* entrepreneurial finance (Petruzzelli, et al., 2019; Kim & Hann, 2015). This research argues that this factor could be considered as part of the success factors on one side of the coin. On the flip side, the crowdfunding platform which encourages capital raising through the crowd could be negatively affected by its *relaxed* and *democratised* nature. Walthoff-Borm et al. (2018) finds that firms that received equity crowdfunding have an 8.5 times higher failure rate when they are compared with firms that did not receive crowdfunding. Their research comparison between equity crowdfunding funded firms and non-equity crowdfunding funded firms show that post financing period there is no significant difference in the profitability of the firms they assessed.

It can be argued that considering the less involvement of finance providers in a crowdfunding scheme in the running of the BG SMEs, agency problems and conflicts of interests are less. Management teams with the right experience and genuine focus of the stated business goals have more control of the resources and priorities and can have a longer-term strategy.

Similar to the findings of Adelekan et al. (2019), the results of the CFA conducted in this research show that banks have a significant impact on the profitability performance of BG SMEs. Adelekan et al. (2019) assessed banks by measuring debt financing on business expansion and output of SMEs in Nigeria. The impact of bank financing is an important element to study alongside other EFMs noting that banks have traditionally provided funding for SMEs in Nigeria. Khan (2020) and Ajayi (2019) found in their research on MFBs, a type of deposit banks also find that banks (MFBs) have a significant impact on the growth of SMEs.



The impact of bank financing on the profitability of BG SMEs was also assessed in this research using OLR. The results of the regression analysis show that there is no significant dependence between bank financing and ROA, ROE and market share of BG SMEs in Nigeria. Comparably, the results are consistent with the hypotheses in this research and with Ubesie et al. (2017) who in their research using a multiple regression analysis highlights that bank financing does not have a significant impact on SME growth.

There is an argument for bank financing which typically provides capital for BG SMEs (Adelekan, et al., 2019). Bank financing increases the liquidity position of these firms, and essentially infers that an increase in the loan facility provided to a firm, invariably increases the firm's liquidity. Therefore, a firm with sufficient capital and liquidity has room to invest in business expansion, product development amongst other growth activities. These activities are capable of increasing the firm's revenue, and thus, improve their profitability performance (Ubesie et al., 2017). Despite the opportunity provided by bank financing to increasing the liquidity positions of firms, Cheong et al. (2019) argue that bank financing is not conducive for SMEs.

The OLR analysis finds that GG are statistically significant in their relationships with ROE but not on ROA and market share. The CFA results also do not find GG to have a statistically significant impact on the profitability of BG SMEs. The research hypothesis (H1) expects that government grant EFM do not have any positive impact on BG SMEs. The literature and research results support the hypotheses in this research. The structure of GG financing exposes the weaknesses in understanding the human capital of the BG SMEs and the possibly high existence of agency problems. GG grants do not have the required capacity to deal with information asymmetry, moral hazard, nor do they have the capacity to efficiently monitor the firms they invest in.

Thus, the existence of agency issues which could impair the integrity and performance of the BG firms. Assessing the operational model of GG EFM, there are indications that they do not apply strict selection mechanisms to evaluate the capacity and strengths of the BG SME management teams. Brachert et al. (2018) maintains that GG financing does not positively influence firms' competitiveness.

### **6.3.2 Relationship between EFMs and BG SMEs' Firm Structure**

Research by Florin (2005) notes that firms that receive venture capital investment (IVC/CVC) have a better and more educated top management team. The results and literature show that IVC and CVC cause a direct change in the management and board compositions (Firm structure) of BG SMEs. One of the key reasons why IVC and CVC-backed firms may have a better-educated management team is the due diligence process conducted by investors before making an investment. IVC and CVC EFMs often take an active role in the companies they fund, providing strategic guidance and mentorship to the management team. This involvement can lead to improved decision-making processes, better governance, and enhanced management practices.

This is indicated in this research findings that some EFMs impact the management and board structures. The literature review discussed elaborately the role IVC and CVC financiers play through value added services. The CFA findings are consistent with the research hypothesis (H2a) and show that CVC has a significant positive impact on the firm structure of BG SMEs, however the findings of the OLR analysis do not support that IVC and CVC impact the outcome of the management and board structures of BG SMEs in Nigeria. The OLR results there indicate that IVC and CVC play a neutral role are indifferent when used by BG SMEs. Zheng (2018) points that IVC only provides value-added effects to firms with a higher degree of uncertainty and firms at specific development stages. This could be the reason why there is no positive effect of IVC on

the firm structure of BG SMEs in Nigeria. The results on the impact of IVC EFM on BG SMEs is not consistent with the expectations of this research and other several literature seen in section 3.5.4. There could be unanswered questions around the region of funds the IVC capital is generated, and the competency of the management team of the BG SMEs. Xu (2022) in their research, conclude that the introduction of IVC has no obvious positive impact on the management structure and the overall strategy of the firms they invest in.

In addition to CVC, the CFA findings show that crowdfunding, PhVC, Banks and BA have a significant impact on the profitability of BG SMEs. A surprising impact on firm structure is by banks. The literature reviewed does not discuss banks as having an impact on the management structure as banks focus on providing loans and protecting the loans using collateral/assets of the borrower. FSS (2020) and SME sector report (2007) note that poor managerial skills pose a constraint to the performance of SMEs in Nigeria.

The OLR findings note that banks positively impact BG SMEs' management structure but not their board structures. Crowdfunding and accelerators both have significant positive impacts on the management and board structure of BG SMEs as indicated by the OLR results. This research proposed crowdfunding would not have a positive impact on the firm structure of BG SMEs in Nigeria, however, the findings are not consistent with the hypotheses (H2). This outcome could reflect a possible low existence of agency problems, the finance donors participating in the crowdfunding platform do not actively engage in the management or decision-making of the BG SME. Instead, they act as passive investors, aligning their goals with those of the business owners and management teams. This alignment of goals implies that the finance donors are supportive of the business's objectives and trust the management

to make appropriate decisions for the company's success. This alignment of interests and lack of active intervention by finance donors can help mitigate agency problems that might otherwise arise in traditional corporate structures, where shareholders may not have direct control over the management's actions. However, it's essential to note that even in such scenarios, some degree of agency problems may still exist, albeit at a lower level. For instance, management might be motivated to prioritize short-term gains at the expense of long-term sustainability, leading to potential conflicts with the long-term interests of stakeholders.

Crowdfunding has become an important EFM in recent years as many young teams have successfully raised equity finance through crowdfunding offerings (Petruzzelli, et al., 2019). Beyond the finance, there are notions that argue that the success of crowdfunding is linked to its ability to validate business ideas, products and services through the crowd Junge et al. (2022). This could also mean, that investors are only willing to invest in companies that have a competent management team with sound ideas and innovative products and services. In addition, the process of raising crowdfunding automatically leads to brand awareness and represents commercial activities. The impact of crowdfunding on the firm structure is hinted in the possible trust investors/crowd have in the management team of the firm seeking funding.

To deal with information asymmetry and agency problems (Kato & Tsoka, 2020), there has been actions taken by EFMs to adjust the management and board structures of BG SMEs they invest in (Hasan et al., 2018). For other reasons the firm structure has been adjusted for the purpose of improving the competency of the management teams and boards of these firms. The impact of EFMs on firm structure analysis with CFA include BAs as being statistically significant. Literature have explained that BAs alongside IVCs and PEs are actively involved in the board and management composition of the

firms they invest in. They have been known to use contracts and covenants that allows them (BAs, IVCs and PEs) to take over the management of their investee firms when performance is deemed poor (do Rosario Correia & Meneses, 2019).

### **6.3.3 Relationship between EFMs and BG SMEs' SROI**

This research finds that the BG SMEs assessed do not measure the SROI. The statistics show that some BG SMEs have social and ethical objectives but do not measure the outcome in relation to the financial investments made to achieve these social objectives.

From the 237 responses received from BG SMEs, about 46% of them do not have any social or ethical objective, however, through their activities they create and deliver social value to their communities. 25% of the total sample report that they have stipulated social and ethical objectives and they acknowledge they create practical social values. A small number of only 4.6% of the respondents note that their companies have social objectives but do not meet any of their set objectives.

When asked if the BG SMEs calculate the SROI they make to fulfilling their social and ethical objectives, 100% of the respondents either replied *No* or *not applicable* as they did not measure their investments in these areas. In trying to obtain external funding, 16% of BG SMEs discussed their social and ethical objectives with EFMs. This percentage highlights a low level of interest in social and ethical objectives in Nigeria. This research would have anticipated more interest in this concept bearing in mind that these BG SMEs operate internationally and interact with global financiers. There is no clear information that shows which particular financial institutions have provide funding for these BG SMEs, however, reports from TechPoint (2021) and Partech

(2020) reveal that funding of start-ups and SMEs in Nigeria comes from a variety of regions including cross border investment sources.

The assessment of the correlation between EFM and SROI performance of BG SMEs aims to understand how EFMs review and impact on BG SMEs social and ethical objectives and the return on investments made to achieve these social value objectives. The results to the principal research question 3 (RQ3) in section 1.5 of this research uncovers that this relationship is not currently measured. It would be statistically wrong to deduce that there is no significant relationship between EFM and SROI performance until can be measured, however, it can be suggested that a non-calculation of SROI performance does not hinder the profitability and outcome of BG SMEs in the region.

#### **6.3.4 Moderating Variables and Effects on Variable Relationships**

The assessment of BG SMEs pre and post funding stages show different results with different EFMs. The results, however, indicate that there are various factors that could impact the performance of these EFMs. The OLR analysis conducted shows that the relationship between EFM and profitability and EFMs and firm structure can be influenced by moderating variables.

##### **6.3.4.1 Management Experience**

The moderating variable – management experience has a moderating influence on the relationship between IVC, PhVC, CVC, Bank, GG and Accelerators and the ROE of BG SMEs. Management experience also has a moderating influence on the relationship between crowdfunding, IVC, PhVC, CVC, bank and accelerators and the ROA of BG SMEs. In regard to the market share, management experience has a moderating effect only on the relationship with IVC.

There are clear indications from the findings of this research that management experience can improve the impact of EFMs on BG SMEs. Bernstein et al. (2017) in their research that surveyed 4500 investors from start-up firms notes that human capital is probably the top of the list criteria that firms need to consider. The team the add plays a role in defining the company and its product and creating the brands unique selling points to help attract EFMs and customers.

Empirical results of this research support H1d, H1e and H1f. These results reflect the underlying idea of human capital theory which indicates that that an increase in the knowledge, experience and capacity of management teams could improve the outcome and performance of firms. Management teams with more years of experience and have obtained industry-specific experiences plays a valuable role in a firm's success (Becker, 1964).

The results show that an input and increase in management experience leads to IVC statistically impacting positively on the ROE, ROA, and market share of BG SMEs in Nigeria. This puts IVC at this point as the most positively impactful EFM available to BG SMEs in Nigeria. There might be arguments as there are some EFMs that have not been measured in this research for the reason that they have not been used by any of the BG SMEs in the sample size.

#### 6.3.4.2 Firm Size

As noted in the literature, there is no universal way of defining and categorizing SMEs and the definition and categorization of SMEs is region and country specific (Kijkasiwat & Phuensane, 2020). The firm size in Nigeria is characterized by employee number and annual turnover (SMEDAN, 2003).

Firm size has a moderating influence on the relationship between Crowdfunding, IVC, PhVC, CVC, Bank, GG, Accelerators and PF and the ROE of BG SMEs. Also, the analysis shows that the firm size has a moderating influence on the relationship between Crowdfunding, IVC, PhVC, CVC, Bank, and Accelerators and the ROA of BG SMEs. The third metrics outcome of profitability uncover that the firm size of a BG SME has a moderating influence on the relationship between IVC and the market share of that firm.

The results support H1g, H1h and H1i that firm size has a positive effect on the relationship between crowdfunding, IVC, PhVC, and CVC and BG SMEs profitability. Ewens et al. (2020) findings are similar to the findings here and note that IVC and CVC EFMs deal with the existence of agency problems which allows them experience positive growth as the size of their portfolio firms increases. Contrary to this research's H1g, H1h and H1i hypotheses, firm size positively influences the relationship between bank financing and BG SMEs' ROE and ROA. There is no positive impact on the market share of BG SMEs. Similarly, the influence of firm size on GG, PF and Accelerators and BG SMEs ROE is not consistent with the research's hypotheses.

There are various research that have assessed the impact of GG on different outcome of firms. Assessing impact on growth in tangible assets and employee numbers, Dvoulletý & Blažková (2019) and Criscuolo et al. (2019) report positive impacts in both



cases respectively. Similarly, the analysis conducted by Banai et al. (2017) to highlight the impact of GG funding on SMEs discovered a positive effect on the sales turnover of these firms. On the contrast, Srhoj et al. (2019) and Brachert et al. (2018) find a negative relationship between GG and SME sales turnover. In the case of this research, the GG has had no positive impact on the direct relationship between EFM and profitability and firm structure, however, including the firm size moderating variable this leads to a positive effect.

The analysis also conducted assessed the moderating effect of firm size on the relationship between EFMs and management and board structures. Firm size has a moderating influence on the relationship between Crowdfunding, GVC, CVC and Accelerators and the board structure of BG SMEs. Firm size has a moderating influence on the relationship between Crowdfunding, IVC, CVC and Accelerators and the management structure of BG SMEs.

## **6.4 Conclusion**

This research discussion of findings focused on the results and outcomes reflected in the analysis. The chapter evaluated these findings alongside similar findings around the subject area. The findings clearly provide answers to the research questions in section 1.5 of this research and shows how EFMs impact on the performance and outcome of BG SMEs in Nigeria.

The discussions present that there have been different findings in terms of some EFMs and the impact they have on firms. There has not been any study of any of the EFMs and BG SMEs in specific but noting that BG SMEs are a unique set of SMEs the findings have been compared fairly with these. There are different levels of impact on

firms, and IVC has had more impact across the different metrics that have been measured in this research.

Firms have received certain EFMs can improve their performances and outcomes by increasing the quality of their management team. There is a moderating effect of management experience and firm size on the relationship or impact EFMs have BG SMEs. This sums up the research by deducing that there are other significant factors that improve the performance of BG SMEs alongside obtaining external finance. It also exposes that the type of EFM obtained is as important as simply obtaining finance.

This research is summarized and concluded in the next chapter, with the limitations faced in the research and some recommendations presented.

## Chapter 7: Conclusions and Recommendations

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### 7.1 Introduction

Entrepreneurial finance is an important element of firms' operations. Many firms have listed access to finance as one of the greatest challenges to business growth and survival., however, over the years, there have been billions of dollars invested in start-ups, SMEs and BG SMEs with little evidence to justify its impact (Dushnitsky & Lenox (2006). Data also shows that about 70% of business fail within 5 years of operating and it has been noted that many of these failed firms received entrepreneurial finance at one point (Bushe, 2019; Douglas, et al., 2017). The statement made by business owners about access finance being their greatest obstacle and the data on failed businesses create a deep divergence in positions and maybe facts. The statistics indicate that there are issues that face BG SMEs which include access to external finance. It is worrisome to see that most businesses that start today will fail within 5 years, especially as it is generally noted that BG SMEs and SMEs as a whole play a vital role in any economy (World Bank, 2019a). To address shortage of capital in the market for business, several EFMs were created by both the private and public sector. Several EFMs were identified in this research including project finance, apprenticeship schemes, IVC, CVC, accelerators, IPS, PhVC, GVC, banks, crowdfunding, ICOs, private/foundation grants, BAs, private equity, and government grants.

BG SMEs as a unique group of SMEs contribute to the creation of jobs, growth of the economy through tax remittance, and innovative developments in Nigeria and other economies (Adebiyi, et al., 2017). To foster sustainable growth and development in the economy, the World Bank iterates that these firms must remain a going-concern with sustainable revenues. The literature review chapter highlights that one-way firms can

remain sustainably viable is by having access to finance amongst other things. In this research, evidence finds that the right finance is as or more important than simply obtaining any external finance.

This research sets out to identify the influence EFMs have on how firms perform and other outcomes that could be seen in a unique set of SMEs called born-global firms. Thus, the aim of the research was to investigate the impact of EFMs on the performance and outcome of BG SMEs in Nigeria.

To achieve the aim of the research, three broad hypotheses were tested. The hypotheses covered the financial performance of BG SMEs (ROE, ROA, and market share), the social return on investment (SROI) and the firms' management and board compositions (firm structure). The range of EFM choices available to business firms affords them more opportunity to access finance but the decision of which EFM to use can influence the performance and outcome of BG SMEs. The research developed a framework that was used to test the 10 EFMs that were used to finance the BG SMEs in the sample size of this research.

This research comprehensively reviewed literature on the agency and human capacity theory. The literature highlighted that the relationship between the agent (BG SME) and the principal (financier/investor) and the capacity of the management teams moderate the interactions between EFM and BG SMEs. Chapter 4 discusses these theories alongside the environmental ecosystem and the environmental context of Nigeria.

The methodology chapter justified the use of quantitative research method and the use of the Qualtrics online questionnaire to collect data. The research questionnaire designed was distributed to 1100 SMEs registered in Nigeria. The questionnaire

included sections to identify BG SMEs that meet the selection criteria and definitions by Knight and Cavusgil (2004). The data obtained from 237 BG SMEs were then used to test the research hypotheses in SPSS and SPSS AMOS. Prior to running the regression analysis and CFA tests, the data was screened and validated to ensure there were no data file errors.

This research obtained results that are relevant to the research aim and objectives. The findings were presented in chapter 6. The summary of the findings is presented below.

## **7.2 Summary of Findings**

This research supports findings that EFMs have an impact on the performance and outcome of firms. The findings show that the type of EFM obtained by a BG SME in Nigeria can affect the firm's profitability and firm structure.

This research presents five (5) key findings: 1. Independent venture capital (IVC), Philanthropic Venture Capital (PhVC), Corporate Venture Capital (CVC), Government Grant (GG), Bank, Business Angels (BA), Crowdfunding and Accelerators have an impact on one or more metrics of BG SMEs' profitability; 2. Crowdfunding, Banks, Government Venture Capital (GVC), GG, Accelerators, PhVC, CVC and BA have statistically significant impact on the firm structure of BG SMEs; 3. Management experience has a moderating influence on the relationship of IVC, PhVC, CVC, Banks, GG, and Accelerators and one or more metrics of BG SMEs' profitability, whilst also have a moderating effect on Crowdfunding, Accelerators, GVC, CVC and GG interactions with BG SMEs firm structure; 4. Firm Size has a moderating effect on EFMs (Crowdfunding, IVC, PhVC, CVC, Bank, GG and Accelerators) relationship with BG SMEs profitability whilst also influencing the relationship between EFMs (Crowdfunding, GVC, CVC, Accelerators and IVC) and the firm structure of BG SMEs;

and 5. All BG SMEs analysed in this research do not measure their SROI despite 46% of sample size creating some form of social value.

### **7.3 Contributions to Knowledge**

The literature review chapter highlighted that the post-investment stage of BG SMEs is under-researched (Hoyos-Iruarrizaga, et al., 2017). This research provides the first research that studies several EFMs and their impact on BG SMEs in emerging markets and within the context of Nigeria and African countries. This valuable research provides a foundation and knowledge base of EFMs in Nigeria. The knowledge gained from this research can be a valuable resource to BG SME research works globally, especially in emerging economies with a similar environmental ecosystem as Nigeria in the subject area of entrepreneurial finance and alternative financing sources (Cumming & Vismara, 2017), and BG SMEs (Knight, 2015).

This research is also the first to study the moderating influences of firm size and management experience. These variables are shown to be key to clarify the impact of EFMs on the performance and outcome of BG SMEs and to note that the right EFM is important for the growth and survival of a firm. As the results reflect, some EFMs have significant impact on the performance of firms and the interactions involving the moderating variables influence the outputs.

The research contributes to the subject area of BG SMEs, a relatively novel concept in Nigeria and the African region. This research adds to the global knowledge of the operations and internationalization process of these type of firms. This has become increasingly important with the changes in business models operations especially due to the COVID-19 pandemic. Several businesses have re-strategized their operations,

moving towards a digital reformation and a system that lets them reach their customers online.

This research highlights the concept of EFM in Nigeria and the various EFMs available to firms in general. There have been no similar study that measures different EFMs and the impact on the management and board compositions (firm structure) of BG SMEs in the environmental context of Nigeria. This is an important contribution as these concepts are relatively new in Nigeria with many business owners still focused on traditional financing options.

#### **7.4 Practical Contributions**

This research leads in studying the post-investment stage of BG SMEs that have obtained an EFM, investigating to understand how the choice for an EFM links and impacts on the performance of a BG SME in Nigeria. Several research studies have looked at the pre-investment stage of financing, but the pots-investment stage is important and looks beyond the conversation that access to finance is a major challenge. This research provides an examination of the role each of these EFMs play in helping a business survive, and sustainably grow.

When business owners and entrepreneurs see that getting the right type of finance/capital surpasses the need for simply accessing finance/capital, BG SMEs and SMEs can rethink their approach to obtaining EFM. Accessing the right EFM can help BG SMEs be more sustainable, thus, reducing the failure rate of these firms. For example, evidence from the CFA and OLR findings show that BG SMEs that obtain Accelerator or IVC funding are likely to experience and impact on their profitability. In addition, such impact on their profitability could be further influenced by the quality of the BG SMEs' management team and the size of the firm.

Other practical contributions of this research are linked to the overall contributions sustainable businesses make to the economy. Businesses can learn to source for the right EFM, which will likely improve their success rates. The more businesses that are successful the more sustainable jobs are created, tax remittance to the government is maintained, the innovations as outputs of these BG SMEs will support their local communities.

## **7.5 Implications of Theory Research and Practice**

This research is focused on nascent subject areas, for example entrepreneurial finance and born-global SMEs. The research develops on the concepts within the ecosystem of Nigeria and the theoretical influences of the agency and human capital theories. The research framework developed and presented in figure 2.6 reflects the inclusion of moderating variables, for example, management experience and firm size that might influence the relationship between EFMs and the performance and outcome of BG SMEs.

This research contributes to the understanding and application of the agency theory and human capital theory in entrepreneurial finance and in the operations of BG SMEs. This research brings to light the role human capital plays in the performance of BG SMEs and their access to sustainable finance.

## **7.6 Methodological Implications**

This research contributes to the methodology process of assessing external finance and firm growth. This research leads in the study by reviewing several EFMs and their impact on BG SMEs in Nigeria. This type of research has never been conducted before and sets out to address crucial elements of business growth and operations in general.



There are essential steps that were taken and justified in this research that could enable similar research processes, for example, the use of questionnaires to arrive at the sample size, the use of dummy variables, the combination of OLR and CFA in investigating the research aims and the measurement of SROI and firm structure.

#### **7.6.1 Sample Population and Data Set**

This research identified the right sample size by including criteria questions in the questionnaire to help identify BG SMEs in Nigeria. Nigeria currently does not have a data base of BG SMEs which presented a challenge in listing the right sample size. By using this process, the challenge was resolved, and the researcher identified BG SMEs (Luukkonen et al., 2013). This process can be used for nascent subject areas and populations that are not properly documented.

#### **7.6.2 Using Dummy Variables**

Similar to obtaining the right sample size, this research also included questions to identify the type of EFM obtained by BG SMEs in Nigerian within five years of their business operations. Ten key EFMs were highlighted and were analysed using a dummy variable. This contributes to knowledge and the validity of using dummy variables to achieve results.

The idea of using dummy independent variables helps this research to identify the different EFMs that had been used by the BG SMEs identified. This was helpful and creates precedence for future research works that investigate phenomena in fields with little or no database. In the case of this research, there was no database that held a list of BG SMEs and the type of EFM they had obtained over time. For research that set out to evaluate the impact of EFMs on the performance and outcome of BG SMEs, the

use of dummy variable was a significant step and provided a valid option to measuring several independent variables.

### **7.6.3 OLR and CFA Analysis**

The research combines OLR and CFA in evaluating the impact of EFMs on the performance and outcome of BG SMEs in Nigeria. The analyses conducted are valid and reliable and contribute to the methodological development of process across research areas. This contributes to knowledge by underlining the application of these analytical processes and their reliability in entrepreneurial finance research works.

### **7.6.4 Measuring SROI and Firm Structure**

Measuring SROI in firms is not a popular activity in profit-oriented businesses in Nigeria. There has not been any research that evaluates the social return of their investments in firms in Nigeria. This research is the first study that delves into assessing how BG SMEs measure their SROI and the impact EFMs have on the SROI.

Also, literature such as Amornsiripanitch, et al. (2019) highlights firm structure as an element in business operations and relationship with EFMs. Firm structure in this research includes management and board composition and reviews the impact EFMs have had on them. Again, these concepts have not been measured in firms in Nigeria and sets the pace to helping business owners and researchers understand factors and methods that could have an impact on performance when obtaining external finance.

## **7.7 Research Limitations**

There were some limitations experienced in the process of conducting this research. These limitations are discussed in sections 7.7.1 to 7.7.8 and under the following subheadings – lack of data and database sources in Nigeria, complex nature of EFMs,

limited access to technology, rigorous methodology, design and adaptation of research questionnaire, novelty of the concepts of EFM and BG SMEs in Nigeria, and COVID 19.

#### **7.7.1 Lack of Data and Database Sources in Nigeria**

One of the main issues this research faced was the lack of availability of data and database sources in Nigeria and about Nigerian BG SMEs. There were no database sources for BG SMEs in Nigeria. There was inadequate data and information around SMEs, their financial operations, and their financial statements.

The absence of a BG SME database source posed a challenge as the research could not outrightly identify the population and sample size. This issue was addressed using the sampling process adopted by Luukkonen et. al. (2013) in their work. The solution entailed identifying BG SMEs and the sample size by using the research questionnaires as explained in section 5.6.1.

Access to the financial statements of BG SMEs were near impossible. The financial records of most BG SMEs were not publicly available, and many BG SMEs were not willing to share the records with externals. As has been noted in this research and by Cavusgil & Knight (2015), BG SME are a unique category of SMEs, which might explain the difficulties in accessing their financial records. Not having access to the financial records of the BG SMEs, meant that it was difficult to measure their performance over the required period (pre and post obtaining external finance). This challenge was again circumnavigated using the research questionnaire. BG SMEs' respondents were asked to rate within a range their financial performance after obtaining their first EFM.

### **7.7.2 Complex Nature of EFMs**

Different EFMs have different operating features and structures. Some EFMs provide equity, some offer debt options, while others offer both capital structures. The different features of EFMs as assessed in the literature review show the complexities of EFMs, for example the different crowdfunding models have distinct approaches. This research highlights PhVC as an EFM that combines the features of IVC and social capital ventures with a focus on social returns.

The complex nature of EFMs could mean that some entrepreneurs do not know how the different EFMs work.

### **7.7.3 Limited Access to Technology**

Only about 45% of people in Nigeria have access to the internet/internet-enabled devices. This leaves the majority of the population without internet access. The limitations in the access to technology also presented a limitation to the researcher as the researcher could not reach some of the firms in the SME sample population. Several email addresses provided in the sample population list bounced back thus making it impossible to distribute the questionnaires.

To address this limitation, the researcher did a web search for many of the companies and obtained new email addresses and telephone numbers. In the process, the research discovered that some BG SMEs had analogue operations in place and physically facilitated their export activities.

#### 7.7.4 Rigorous Nature of Methodology

The research methodology was rigorous and complex, this included the data collection process of reaching out to respondents through email and telephone, to using SEM and OLR. Some of the processes were initially difficult to apply by the researcher but with constant training and zeal to achieve the research aim and objectives the researcher's skills in the methodology and data analysis became *adequate*. This limitation meant that the researcher spent valuable time learning the methodological process which could have otherwise been put into the applied research, thus extending the research time.

That being said, the intricate process, and the meticulous learning stages improved the quality of data obtained and the validity and reliability of the research process. The researcher made efforts to clearly present the methodology and data analysis procedures whilst meeting the scientific guidelines of the research methodology adopted.

#### 7.7.5 Design and Adaptation of Research Questionnaire

The questionnaire used in this research was adapted from surveys conducted by Parkes et al. (2018) and the ECB & EU (2016:2009). There were challenges in adapting these surveys that were conducted in different environmental ecosystems and tailoring them to fit in this research's aim and objectives and within the context of Nigeria. The unavailability of data made it difficult to measure the financial performance, SROI and the firm structure. This also meant that the questionnaire had to be adapted to quantitatively measure these outcomes in BG SMEs.

There are assumptions that the concept of EFMs was not very popular in Nigeria, which its external funding market is only just developing. This assumption was taken

into account when designing the questionnaire. Notes and explanations of terms and concepts were provided. A pilot study was run to test the quality of the questions, structures, simplicity, clarity and ease of comprehension. The Qualtrics platform also provided analysis of the questionnaire, and suggestions were taken onboard to modify the questionnaire before it was sent out to respondents.

#### **7.7.6 Novelty of the Concepts of EFM and BG SMEs**

The concept of EFM and BG SMEs is relatively new in Nigeria. Some EFMs have not been captured or recorded as having provided any finance to any Nigerian company. Also, the idea of BG SMEs is relatively unknown in Nigeria. Some business that fit the BG SME criteria do not know they are described as BG SMEs. Some entrepreneurs the researcher discussed with during the research have never heard the term BG SMEs. This presented a challenge and might explain why there is no database of BG SMEs in Nigeria.

In the research questionnaire, EFM was explained (see appendix 4.1), and external finance/funding was used to in place of the term EFM. To identify BG SMEs, questions were included in the questionnaire for respondents to answer. These questions were included as a criteria check, and a process for the researcher to detect BG SMEs from the SME population size.

#### **7.7.7 COVID 19**

The outbreak of the COVID-19 pandemic presented one of the greatest challenges for the research. The pandemic caused restrictions of movement in most parts of the world including the UK and Nigeria. This saw many businesses suspend their entire operations, halting their revenues.

Within the University, the buildings were closed, leaving the researcher to work at home, in an uncondusive research environment. The working tools at the researcher's home were inadequate and caused significant delays. The University also prohibited students from carrying out any face-to-face data collection. For a country like Nigeria with poor access to technology (internet, emails, internet enabled devices, etc.) A face-to-face interview would have helped in achieving a higher response rate. However, the online questionnaire used in this research was used as an alternative and was seen to have helped reach a larger number of BG SMEs.

The research timeline was extended by several months to account for the data collection delays.

#### **7.7.8 Research Ethics Approval on Converis**

The researcher experienced some technical difficulties with Converis platform used for the research ethics application. With the help of the supervisory team and the University the issue was resolved.

### **7.8 Recommendations**

BG SMEs have been highlighted as important institutions in the sustainable growth and development of economies. This has spurred many governments and private financiers to create enabling environments including the provision of capital for these businesses to thrive. Despite so many financing schemes by governments, including the Nigerian government, many businesses have failed. It has become paramount to understand how external financing options described as EFMs impacts on the performance and outcome of BG SMEs. This research highlights that profitability and performance of BG SMEs are subject to various factors with different levels of influence. The findings from the direct relationships of EFMs with profitability of BG

SMEs and the findings that included the management experience and firm size variables revealed that with increased levels of management experience, the outcome and impact of EFMs could be different.

Future research should take into account other moderating variables that exist in the interaction of EFMs and firm performance. For example, screening and selections, contracts and covenants, networking, and training have been described as added value offered by some EFMs that could impact on the performance of investee firms.

There is great potential for further investigation of the amount of funds provided at each time by the EFMs to the BG SMEs. This can help measure the impact of EFM on BG SMEs by investigating if BG SMEs' performance is subject to receiving the right and required sum as opposed to simply accessing finance from one or more of the EFMs. There is a need to understand the impact the investment size per deal has on the performance of the BG SMEs. Some EFMs have internal targets and thresholds of funds they can invest per firm or at a particular stage of the firm (Chicktay & Barnard, 2019). These thresholds might be less than the required amount needed by the BG SME to achieve positive sustainable growth.

Beyond assessing the impact of EFMs on BG SMEs, further research should assess the cognitive bias and the reason why business managers choose one EFM over the other. This research notes from the responses provided in the questionnaire that some respondents are not familiar with certain EFMs while others applied to several others and obtained finance from any EFM that was willing to provide finance to them. This will be a critical element that needs to be studied and might be useful to be conducted using a qualitative methodology. Cumming et al. (2021) note that firms that have younger management teams are likely to go for equity crowdfunding offerings that



they will for an IPO. They add that they are also more likely to successfully complete the offering. This implies that cognitive bias can influence the type of finance management teams' approach, and this can also be influenced by the management team experience and background amongst other factors.

This research applied a scientific process using OLR and SEM to achieve the research aims, however, the cognitive element driven by human understanding and emotions could play a role in entrepreneurial finance.

Finally, this research discusses the environmental ecosystem concept which some research experts believe to hold several factors that could determine the type of EFMs available in different regions and at different times, and the impact these EFMs could have on firms within that region. Though this has been reviewed in the literature, further studies could measure the PESTEL factors within the environment ecosystem and in the entrepreneurial system.

## **7.9 Conclusion**

This chapter provided a summary of the overall research. In addition, the limitations faced by this research were reviewed and assessed in this concluding chapter. These limitations included the complex and novel nature of EFMs and BG SMEs. The research explained limitations caused by COVID-19 and technical difficulties in obtaining ethics approval. Some of the solutions that were useful in by-passing these challenges were noted, some other limitations could be addressed in further research.

The recommendations suggest that the amount of funds required and received from an EFM by a BG SME should be investigated in future research.

Finally, this research highlighted the meticulous process undertaken to investigate the impact of EFMs on the performance (ROA, ROE, market share and SROI) and outcome (management and board composition) of BG SMEs.

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## Appendices

### Appendix 1.1: Features Entrepreneurial Finance Models

The table below is an extract of the different EFMs and their the type of funding they offer to firms, the ROI the expect from their investments the firms and ideologies they target alongside the added-value they provide. This is discussed in more detail in section 3.

S/N	Entrepreneurial Finance Model	Funding Option	ROI	Added-value (Non-financial)	Investment Target
1	Independent/traditional venture capital (IVC)	Debt and Equity	Financial		Later stage start-up
2	Business angel (BA)	Equity	Financial	Mgt support & network access	Early stage start-up
3	Bank loans	Debt and Equity	Financial		Later stage firms/collateral
4	Crowdfunding				
5	Debt-based	Debt	Financial		Early stage start-up or project
6	Donation-based		Social		Social venture or project
7	Reward-based		Product-related		Early stage start-up or project
8	Equity	Equity	Financial		Early stage start-up or project
9	Accelerators	Debt & Equity	Financial, strategic, and political		Early stage start-up
10	Philanthropic venture capital (PhVC)	Equity	Social		Early stage start-up
11	Government venture capital (GVC)	Debt or Equity	Governmental and financial		Early and later stage start-up
12	Corporate venture capital (CVC)	Equity	Financial, technological and strategic		Early and later stage start-up
13	Initial coin offer (ICO)	Equity	Financial		Early stage start-up
14	Private equity (PE)	Equity	Financial		Early and later stage start-up
15	Intellectual property (IP) based funds		Financial		Patents
16	Intellectual property (IP) backed debt funds	Debt	Financial		IP based start-ups & established mid-size firms
17	Project financing	Debt or Equity	Financial		All stages
18	Apprenticeship model	Grant	Social	Training	Start-up
19	Public Grant	Grant	Social	Training, network access, & marketing	Early and later stage start-up

## Appendix 2.1: Entrepreneurial Finance Models

BG SMEs and SMEs have played important roles in economic and social development of countries. They have led innovative developments, created jobs, and contributed to economic growth at different scales. The World Bank still records that these group of firms will remain active and potent to globally growth. Despite their significant contributions to the financial system, they are constrained by limited access to external funding and capital shortages. These constraints many have argued leave them handicapped and unable to operate effectively with about 70% failing within their first five years in business (Kato & Tsoka, 2020). Many BG SMEs have sourced external finance from various EFMs in a bid to meet their funding needs. Research and reports show that some of these BG SMEs that have obtained external finance make up the 70% of failed SMEs. These statistics suggest that these firms face an inherent problem which goes beyond just their *inability to access external finance*.

The design of this research aims to provide an understanding of why BG SMEs that have obtained one or more EFMs still fail. The research achieves this by critically assessing the performance and outcome of BG SMEs that have obtained one EFM with Nigeria as the context. The process of the research is clearly reflected in the seven chapters of the research.

### 2.1.1 Venture Capital

The period following the financial crisis was flooded with various regulatory restructuring within the banking and financial sector. These regulatory reviews affected venture capitals, thus causing them to change their basic nature of operations (Cumming & Knill, 2012). In the past, VCs have been bemoaned for being overly

secretive and barely disclosing their operations even to institutional investors like pension funds (Cumming & Knill, 2012).

The existence of the venture capital market had been identified long time ago back in the late nineteenth century (Campbell, 2003), and mentioned in early literatures by Gorman & Sahlman, (1989). The VC market existed as entrepreneurial investments made and controlled by wealthy families such as the Vanderbilts and Rockefellers (Campbell, 2003). Campbell (2003) notes that this control by wealthy families evolved with the involvement of institutions such as American Research and Development (ARD) and the UK Industrial and Commercial Finance Corporation (ICFC) who saw an opportunity in this funding technique.

The research observes that the capital market has grown since the 1980s and post the financial crisis era with more innovative VC firms and Silicon Valley firms. Chemmanur & Fulghieri (2014) note that though VCs have transformed particularly in the last 20 years, they have still contributed tremendously to the growth of new ventures around the world. They add that the changes experienced by VCs have been as a result of trends in technological innovations and globalization. Cumming & Knill (2012) mention changes in financial regulations as one of the factors affecting the structure of VCs.

Various academics have rendered their understanding of the concept of venture capital. Campbell (2003), defines VCs as firms the pool funds with the motive of investing in identified innovative ventures. The basic idea of Campbell's definition is that VC firms are made up of investors, and these investors are looking to grow their investments which the VC firms do by investing in small and medium enterprises, born global SMEs, large ventures for a significant return.

Venture capital firms have been identified as providing value add-ons besides the provision of capital (Gompers & Lerner, 1999). VCs have been pointed as attaching exceptional managerial guidance (Cummings & Knill, 2012; de Bettignies & Brander, 2007; Kaplan & Stromberg, 2001), monitoring and guidance of operations (Hirsch & Walz, 2013; Cumming, 2008; Gorman & Sahlman, 1989), technology and technical resources (Denis, 2004), network and market expansion. Lahr & Mina (2016); Popov & Roosenboom (2012); Kortum & Lerner (2000) find that VCs advance the innovative performance of firms that they invest in, and this they can do with their unique managerial and coaching inputs. Lahr & Mina (2016) acknowledges that VCs do tend to bring in additional value but present an unpopular case that these value additions do not make any essential differences to the performance of the firms but that rather the VCs have exceptional selection capabilities to identify firms with high performance potentials. Kaplan & Stromberg (2001) that notwithstanding, VCs reshape the composition of a firm's top management, about 14% of the time during screening of the firms and 50% of the time the VCs make the changes right after they make the investments.

The concept of venture capitalism injected a new structure of funds into the capital market that was more open to risk taking and to providing seed capital. This form of entrepreneurial finance was birth due to the stringent and capital constraints faced by firms to raise the needed capital to start and grow their businesses (Carpenter & Petersen, 2002; Beck & Gordon, 1996). There was need to find alternative means to the traditional finance (e.g. family and bank loans) of funding business operations (Chemmanur & Fulghieri, 2014), hence the VC concept was formed.

Various literature such as (Buchner et al., 2018; Groh & Wallmeroth, 2016; Chemmanur & Fulghieri, 2014; Luukkonen et al., 2013; Croce et al., 2013); have



pointed at the changes and new formation of the VC concept that have occurred over the years. Chemmanur & Fulghieri (2014) referred to the original VC concept in their paper as the ‘traditional venture capital’ model. They discuss how the globalization of the world and the massive growth of technology have affected VCs.

While discussing globalization as a change factor of VCs formation, Chemmanur & Fulghieri (2014) record that VC injection of funds into the capital market grew significantly globally from about 10% in 1991 to over 22% in 2008. They attribute this increase to the involvement of more international venture capital firms/investments especially in emerging economies. They highlight that within the same period of 1991 to 2008 the investments of VCs in emerging economies rose from 8.7% to 56%. Cross-border investments saw an upward movement within the period with international and local VC partnership seen as well (Chemmanur & Fulghieri, 2014).

Lahr & Mina (2016) pointed that VC firms were sceptical to investing in cross-border regions in the emerging and developing economies citing the high risk in those regions and a high level of information asymmetry. With the connection of the world into a global village, VCs have now over the years tackled distance, monitoring complications (e.g. agency cost) and information asymmetry by partnering with local VCs who have better knowledge and power within these foreign territories (Chemmanur & Fulghieri, 2014).

Regarding the technological impacts on VC, Chemmanur & Fulghieri (2014) state that the creating of the internet and other hi-tech innovations have caused reductions in the cost of different forms of communication. These cost reductions have invariably reduced the cost of the operations of VC firms’ monitoring and management. They added that these have also encouraged cross-border venture capital partnerships.

There has also been the need for alternative financing models that address the new innovative firms seeking financing (Chemmanur & Fulghieri, 2014), and also models to address new regulatory requirements that focus on disclosures and transparency (Cumming & Knill, 2012).

The impacting factors discussed by Chemmanur & Fulghieri (2014) and Cumming & Knill (2012) have seen the evolution of new concepts of venture capital. The new forms of venture capital identified are the Government Venture Capital (GVC) (Block et al., 2018; Luukkonen et al., 2013), Philanthropic Venture Capital (PhVC) (Scarlata et al., 2017), Corporate Venture Capital (CVC) (Block et al. 2018), Social Venture Capital Fund (Block et al. 2018). These different types of venture capitals will be further discussed below.

### **2.1.2 Government Venture Capital**

In European countries, the government venture capital (GVC) funds have been created to provide more funding for SMEs (Lerner, 2002; Lockett et al. 2002); and early-stage ventures (Luukkonen et al., 2013). Through entrepreneurial finance many private and public sector individuals, corporates & governments have the desire to grow their regions into large successful business environments that foster economic growth (Armour and Cumming, 2006). In June 2016, the European Commission launched the European Strategic Investments Fund which was aimed at raising €315 billion in investments (Cumming & Groh, 2018). The EU believes that the strategic fund could generate over 1.3million new jobs in start-up firms and SMEs within the region (Cumming & Groh, 2018) According to Munari & Toschi (2015) the key reason GVC funds were set up was to reduce the funding gap and increase the availability of

investment finance in the private capital market Munari & Toschi (2015) report that according to the European Commission, there was a regional equity gap, which then incited more government policies geared towards providing innovative venture capital. The GVC funds are predominately funds made available by governments and regional authorities of nations, and it is believed that with increased access to entrepreneurial finance, there would be significant growth in innovative firms and implementation on creative initiatives (Munari & Toschi, 2015). Overall, government sees the provision of capital to firms through the GVC funding initiative as a pertinent policy drive to foster not only the growth of private firms, but also their countries economic development process (Munari & Toschi, 2015). However, the idea of the governments' participation in venture financing have been hypothesized in two categories: the spillover hypothesis (European Commission, 2005; Cressy, 2002), and the market failure hypothesis (Hyytinen & Vaananen, 2006).

The spillover hypothesis of providing additional finance is the notion that these innovative ventures create new jobs, develop new ideas and fosters an enabling environment that other sectors of the economy can profit from (European Commission, 2005; Cressy, 2002). While the market failure hypothesis according to Hyytinen & Vaananen (2006) tends to provide a hedge by encouraging research and development (R&D) and reducing information asymmetry.

Luukkonen et al. (2013) observe that in addition to the funding being made available by GVCs, as professional investors, they also deliberately transfer value to firms they invest in, by providing coaching and management schemes. It is seen that these transfers of values are aimed at strengthening the firms' financial management capabilities, administrative strategy and management structure. Block et al. (2018) argue that the success of GVC is largely dependent on the environment in which they

operate in. They add that GVC is largely seen in less developed regions and emerging regions.

Beyond just making finance available to the private capital market (Munari & Toschi, 2015) the overall impact of the GVC funds to the investee firms in different regions has not received considerable attention. Munari & Toschi (2015) have discussed GVC in substantial details, using the agency and human theory to elaborate on the distortions of goals and competence could impact on the outcome of firms. Munari & Toschi (2015) investigates the impact the GVC funds have had in the UK. Munari & Toschi (2015) assess the impact of GVC funds, and then compares them to independent venture capital (IVC) funds. They focus their analysis on three performance indicators: the success rate, staging and syndication. Following their assessment, they find that the performance of funds in firms is largely dependent on regional factors. The results of their research show that based on the three performance indicators measured that GVC funds have a lower impact on ventures compared to IVC funds. Notwithstanding the increasing interest in the growing participation of government in the provision of investment funds through GVCs (Zhang & Mayes, 2018), Howell (2014) noted that there has been successful implementation of GVC programmes in countries such as the USA and Israel. Lerner (2019\*) on the other hand stated that the GVC model has also experienced failure in other countries studied. While studying the performance of the GVC model in some European countries, Cumming (2017) highlights that firms that received GVC funding underperformed when compared to firms that received private venture capital funds (IVC & CVC). The primary measurement metrics used were based on the success of such firms' IPOs and M&As (Zhang & Mayes, 2018).

### **2.1.3 Philanthropic Venture Capital**

Different from the traditional venture capitals, Philanthropic venture capital (PhVC) has emerged as a funding model of entrepreneurial finance (Scarlata, et al., 2017). PhVC provides finance for firms as well as value-added services, but in addition to expecting financial returns they expect their portfolio firms to provide social returns in investment (Scarlata, et al., 2017).

### **2.1.4 Corporate Venture Capital**

This model of entrepreneurial finance is used to describe investments made by corporates or large firms into enterprises at different business lifecycles (Block, et al., 2018). Chemmanur & Fulgherie (2014) describes them as subsidiaries of corporate ventures structured to offer more long-term investments than the traditional venture capital funds. Corporate venture capital (CVC) funds are interested in financial returns and social benefits. Block, Colombo, Cumming, & Vismara, (2018) agree that CVC provide equity finance and are long-term investors that are willing to wait much longer than individual venture capitalists. The CVC fund has continuously gained popularity and at the end of 2011, reports recorded by National Venture Capital Association showed contributions of CVC to the total investments amounted to 15% of the investment share (Chemmanur & Fulgherie, 2014). CVC financing creates opportunities into new and innovative markets for both small and large firms to term into novel ideas and technologies (Dushnitsky & Shapira, 2010).

The idea of CVC is to support the growth of high innovative start-ups or SMEs through large corporate funds. Large corporates through the CVC fund innovative start-ups as an alternative of acquiring them and integrating them into the larger brand (Block et al 2018). Dushnitsky & Shapira (2010) note that the investment strategies of CVC firms

are practically different from the traditional venture capital funds or the independent venture capitals (IVC). They point that CVCs are more prone to invest in later stage ventures than in start-ups.

In discussing the impact of CVC on the performance of firms, Dushnitsky & Shapira (2010) raised the link between firm performance and the principal-agent relationship. The principal being the shareholders and the agents being the managers. Dushnitsky & Shapira (2010) put forward an argument that shareholders decision to tie managers' salary to performance could motivate them to sort decisive ways of attaining profitability which could include investing in risky assets/projects that they would normally not have subscribed to. Dushnitsky & Shapira (2010) claim of a link between firm performance and agent pay scheme has yet to be conclusively proven, though this opinion is shared by other researchers in the field (Core et al., 2003; Dalton et al., 2003).

#### **2.1.5 Social Venture Capital Fund**

Social venture capital fund is a type of entrepreneurial finance model that provides equity and debt finance to firms that not only would ensure a return on investment but will also achieve social impact goals or SROI (Block et al. 2018). Social venture capital fund differs from the traditional venture capitals because it focuses on both financial return on investment as well as social returns whilst the traditional venture capitals focus only on the financial returns (Block et al. 2018).

### 2.1.6 Crowdfunding

Crowdfunding is an ideological investment tool that was spurred by micro-funding and crowd finance sourcing which developed with the growth of the internet (Cumming & Grog, 2018). It came into existence as an alternative form of financing and has become popular over the years to raise funding from the public having raised over \$1.5billion from over one million campaigns (Tomczak & Brem, 2013). Crowdfunding is the process of raising entrepreneurial funding usually small amounts from a large population of people (Murray, 2015), to provide funding support for a particular project or goal (Ahlers, et al., 2015). It has been explained to be an aggregated funding of people typically through the medium of the internet pooled together with the intention of investing and supporting the initiatives of an entrepreneur or innovative organisation (Ordanini, et al., 2011). This large number of individuals or groups are referred to as the crowd and access to the crowd has been facilitated by the internet and communication technology (Ahlers et al., 2015; Murray, 2015; Moritz & Block, 2014).

There is the idea that a strong connection around funding crowdfunding campaigns is the idea and possibility of transforming customers who have attachments with a firm's ideology into investors (Ordanini et al. 2011). Muniz & O'Guinn (2001) further explain this idea by illustrating that some business organisations have provided symbolic products and services that consumers have become attached. Consumers begin to have a shared identity with these firms and are willing to let themselves feel more as part of the business than as just customers (Muniz & O'Guinn, 2001). Ordanini et al. (2011) notes that this brand community membership benefits from the possibility of the crowd engaging in promoting the business.

Just like venture capitals, crowdfunding has also gone through some transformation based on the funding structure and integral concepts of obtaining funds from the crowd. The broad concept of crowdfunding is now composed of civic crowdfunding (Stiver et al. 2015) and peer-to-peer lending (AFME, 2015).

Davies (2014) postulates that the civic crowdfunding mentioned by Stiver et al. (2015) could be described as a reward-based crowdfunding scheme that arranges for the funders/crowd to receive a reward on their investments. However, Stiver et al. (2015) disagrees, stating that the reward-based scheme does not stipulate obligatory paybacks, but rather suggest rewards as incentives.

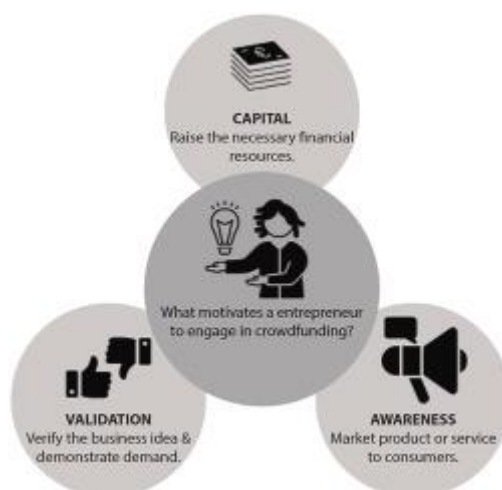
On a different note, Bradford (2012) listed in an earlier research five subcategories of crowdfunding – (1) Donation-based (2) reward-based (3) Pre-purchase (4) Lending-based, and (5) Equity-based. Block et al (2018) acknowledge four types of crowdfunding listed by Bradford (2012), which they list as, reward-based crowdfunding, donation-based, lending-based and investment-based crowdfunding. Block et al (2018) research paper did not recognise the pre-purchase model of crowdfunding. Cumming & Groh (2018) state that the pre-purchase crowdfunding model is often described as a reward-based crowdfunding by several experts, it is therefore hardly mentioned as a separate crowdfunding tool.

Research shows that there are three main aims why firms use crowdfunding to finance their business (see figure below) (Juunge et al., 2022). The first is to raise the required capital. Capital being one of the most important reasons for using crowdfunding bridges the gap between a firm's ideas and application. The second reason is to validate the business idea. By interacting with the crowd and the response towards raising funds can be interpreted to reflect how well the business would do. Large engagements



and large equity contributions can mean that the public believes in the idea and thus validating it, vis-à-vis. The final reason why firms use crowdfunding is to create awareness for the company, brand, product or services.

**Figure: Three Aims of Using Crowdfunding**



Source: Junge et al. (2022)

Though the crowdfunding model has generated significant investments and has been used by millions of firms to raise funds, Profatilov et al. (2015) notice that it has failed in providing the required finance for huge investments.

### 2.1.7 Private Equity

Private equity (PE) has been described by Klein et al. (2013) is a form of equity that is traded privately and not on the public equity markets. Mill (2011) cast that PE firms and VCs are happier to make the additional investment in ventures they are already invested in than they are to invest in new firms and taking on new risks. Abereijo & Fayomi (2005) relate that PE firms typically offer their funds to experienced fund managers with expertise in equity and debt financing, who have potentials to beat the

trading benchmarks. Klein et al (2013) notes that PE firms invest in ventures in all business lifecycles, and for mature businesses, they invest through buyouts.

PE firms just like VCs tend to bring management expertise to the firms they invest in, which is majorly to ensure that their funds are being utilised by trusted, competent management team (Abereijo & Fayomi, 2005). There are varying positions as to the efficiency of PE funds compared to other entrepreneurial finance models available. Bernstein (2012) states that firms that have PE investments grow rapidly more than other firms in terms of total production, value addition, employment and in total wages to industry employees. Research conducted by Bloom et al. (2009) show that a PE managed firm performs better than other firms without PE investment. This result has been questioned as it is unclear if the PE management was responsible for the effective leadership.

There has been some notable PE funding for various firms including born global and SME firms. One of which is the Small Enterprise Assistance Funds (SEAF) (Abereijo & Fayomi, 2005). SEAF is a fund manager that is primarily dedicated to providing SMEs with private equity and risk capital financing is an example of plans to boost SMES (Abereijo & Fayomi, 2005). SEAF apparently tries to setup a capital market platform for SMEs and is currently providing finance for about 190 SMEs with an average of \$300,000 investment in each. SEAF is said to have about \$300million in capital under management.

The concept of PE as a financing model was documented with the buyout of Houdaille Industries by KKR in 1979 (Klein et al., 2013).

### 2.1.8 Business Angel Investors

Business angel financing has been described by some as an informal form of providing capital to ventures (Croce et al., 2018; Carpenter & Petersen, 2002; Hall, 2002). The business angels are also described as high net worth individuals (HNWIs) who have substantial business investment knowledge and sometimes have practical business experiences (Wallmeroth et al. 2018; Croce et al., 2018; Lindsay, 2004). Cumming & Groh (2018) describe business angels as private investors who typically invest their own wealth of between \$10,000 and \$250,000. According to Croce et al. (2018), the informal capital market is saturated by these HNWIs who provide entrepreneurial financing to firms as business angels (BAs). BAs operate differently from other entrepreneurial financing models discussed in this paper. However, a lot of research discuss business angel financing closely with venture capital finance.

Business angels (BAs) are a high entrepreneurial finance prospects for SMEs and an argument presents that business angel investors (BAs) are more likely to provide seed finance for new SMEs and for risky growing companies with poor credit and cashflow information (Mason & Harrison, 1995). A recent work by Sohl (2007; 2012) supports Mason and Harrison's idea by adding that they (BAs) are more likely to invest in seed ventures than VCs. They sieve through larger prospective SMEs by using the elimination-by-aspects to decide on the SMEs with the most potentials (Maxwell, et al., 2011). Goldfarb et al. (2013) and Shane (2012) point that BAs are more likely to provide funding to firms that fall just below the requirements of VCs. Following that, the research assesses if BAs are more risk prone than VCs are, or are they simply less knowledgeable of the inherent risk?

BAs make investments in ventures directly and invest as syndicates (Mill, 2011). Like VCs, some BAs also contribute specialised skills and experiences to SMEs (Mill, 2011).

### **2.1.9 Accelerators**

Accelerators are operational platforms that provide support to start-ups by offering mentorship, network access, funding and various shared resources to make it easy for such firms to stand on their feet whilst on their way to achieving business growth (Hallen, et al., 2016). According to Drover et al. (2017) “accelerators are cohort-based programs that trade a configuration of mentorship, workspace, and/or funding, often in exchange for equity”. Accelerator financing typically provides capital in the earliest stages of firms, making available investments that amount from \$25,000 to about \$150,000 (Drover et al. 2017). The accelerator financing model helps firms accelerate their growth, using shared spaces and resources of the financiers which they can use for an agreed fixed period. Hathaway (2016) states that these firms benefit from well-equipped facilities, mentorship and expertise of the financiers, business network and more. Drover et al. (2017) finds that, at the end of the agreed fixed period of a firm’s stay, the firm is expected to present their concept to an investment team and other stakeholders in what is termed a demo day.

The accelerator entrepreneurial finance model has become more popular over the years, with the Y-combinator concept of accelerator being adopted globally. Shane (2016) acknowledges this growth in their research findings by stating that the increase has grown from 1 accelerator firm in 2005 to over 500 in 2015.

### **2.1.10 Intellectual Property (IP)**

It is believed that born-global SMEs and start-ups are considerably new to the market and do not have a trading record that could be used to analyse their track record and viability (Shepherd et al. 2000). Financiers have sort different mechanism to make

investment decisions, and tackle information asymmetry. One of which has been the evaluation of intellectual property (IP) assets of these enterprises (Block et al. 2014). Sanders & Block (2011) discuss that IP assets does affect the value of firms, their ability to attract funding and their performance. Earlier research by Gruber (2004); Kraus et al. (2011) suggests that IP asset are a form of entrepreneurial marketing investments and are substantially relevant to the growth and success of young enterprises. Cao & Hsu (2011); Mann & Sager (2007) find that SMEs & start-ups with IP assets exhibit a superior performance than other SMEs without IP assets. They also agree that they are more likely to attract entrepreneurial finance than SMEs with IP assets.

Block et al. (2014) highlight that financiers can use IP assets and trademarks as a source of information in investing and valuing SMEs and start-ups.

Block et al. (2018) identifies two (2) forms of intellectual property investment models – IP based investment fund and IP back debt funding.

#### Intellectual Property (IP) Based Investment Fund

Intellectual Property (IP) describes intangible assets that companies could use to enhance their company asset base (Swaminathan, 2016). IP-based investment funds are funds provided in exchange for IP of a company, e.g., patents, trademarks etc. (Swaminathan, 2016; Gredel et al. 2012).

The IP-based model does not provide debt or equity finance, but by acquiring an IP of a company in exchange for funding finance is raised which the company uses to advance its business goals (Block, et al., 2018).

#### Intellectual Property (IP) Backed Debt Funding

IP-backed debt funding allows firms to use their IPs as collateral to obtain finance (Fischer & Ringler, 2014).

#### **2.1.11 Initial Coin Offering (ICO)**

Recently, there has been a rapid growth of blockchain technology (Cumming & Groh, 2018), which has also led to the growth in the academic interest in the subject. It was recorded in May 2017 that blockchain products – bitcoin and Ethereum were listed among the most popular search terms on the Google search engine (Altcomtoday, 2017). Tapscott & Tapscott (2016) lay claim that the blockchain is making a wave of replacing the current internet as is known (internet of information) to a more value resource platform (internet of value). It is believed that the internet of value is being made possible through an innovative integration of cryptography and economics (Cumming & Groh, 2018). Cumming & Groh (2018) explain that cryptography has the capacity to review and validate transactions that have occurred in the past, while economic component provides the preservation of historic transactions, or the creation of a chain of blocks, are valid in the future. The blockchain has made possible digital currencies operating as cryptocurrencies.

Cryptocurrencies are technological platforms of synthetic commodity money that has non-monetary value and is a scarce resource (Wang & Vergne, 2017). Cryptocurrencies are a special innovative asset, (Wang & Vergne, 2017), that could be exchanged online (Cumming & Groh, 2018). They can be used to represent equity in a firm, reflecting an investor's shareholding ownership value (Cumming & Groh, 2018).

The exchange instruments used in cryptocurrency are known as coins or tokens (Cumming & Groh, 2018). With the cryptocurrency digital money (coins or tokens) the new approach facilitates innovative funding through what is being known as 'Initial

Coin Offering' (Cumming & Groh, 2018). Boreiko & Sahder (2018) has mentioned that the ICO has been viewed as one of the most disruptive techniques that start-up firms have used to attract finance.

Cataline et al. (2018) have acknowledged the growing utilization of ICOs to attract funding, recording that ICOs and token sales were used to raise more capital in 2017 than through the traditional VC model.

## **2.2 BG SMEs**

BG SMEs as a category of SMEs play a significant role in the economic development of countries, through the creation of jobs, tax remittance, and other innovative activities. To drive this growth, these firms need to remain operational and be able to generate sustainable revenue. Academics and business experts have reasoned that for firms to be able to achieve their set goals, they will need to be capital sufficient. Nevertheless, many of these firms face capital shortages.

This research in this chapter explores BG SMEs and their development in Nigeria. BG SMEs have been defined differently by different authors. To focus the research, the definition provided by Knight and Cavusgil was adopted. Therefore, BG SMEs in this research are defined as business organizations that internationalize their business operations, either through exporting, repositioning or expanding their products or services beyond their country of establishment from the point of inception to 5 years of business operation while generating a minimum of 20% revenue from international sales.

### Appendix 3.1: Introduction

The importance of BG SMEs has been noted through the understanding of the role SMEs play in Nigeria, the essence of providing finance to these firms has not been lost.

Relevant works of literature have shown that it is not just BG SMEs in Nigeria that face the challenges of raising financial capital. Achugbu (2017) purports that the shortage of entrepreneurial finance in Nigeria is compounded by the ravaging underdevelopment of the entrepreneurial financing industry. Achugbu (2017) and Daramola (2012) add that entrepreneur financing models like IVCs are relatively new, and only recently gaining huge attention in the region. Daramola (2012) reflects that one of Nigeria's first attempts at IVC financing was the creation of the Natural Risk Fund plc in 1987. After which the Small and Medium Enterprises Equity Investment scheme (SMEEIS) was created in 2001 (Achugbu, 2017). SMEEIS was a voluntary initiative that was created by Nigeria's Bankers' Committee and approved in their 246th meeting held in December 1999 to support the financing drive of the government. Following the approval and launch of SMEEIS, it was agreed that all Nigerian banks were required to provide for equity investment 10% of their PAT, to support the government's drive to enhance the growth opportunities of start-ups and SMEs (Achugbu, 2017). Daramola (2012) believes that IVC financing is essential to BG SMEs in Nigeria, as they can boost the creation of jobs and firm growth, thereby promoting the economic growth of the country. Achugbu (2017) claims that the vast majority of start-ups and BG SMEs do not know many entrepreneurial financing options where they could access the capital they require. They add that these SMEs have to rely on financing their business activities tapping into their savings for the business idea to hatch and grow.



Although SMEs and start-ups can foster economic growth in Nigeria, many of these SMEs and creative firms do not grow beyond their shells as they lack the required finance (Achugbu, 2017). Goldberg (2012) highlighted that SMEs have been dependant on traditional sources of finance, however, there has been a decline in the availability of capital from these traditional sources for many years. Goldberg (2012) noted it had become imperative for SMEs and start-ups to access other finance providers which were seen as relatively new, for example, IVCs, business angels (BAs), crowdfunding, and CVCs. The idea of diversification in obtaining external finance in Nigeria has improved the capital raised in the region as research reports by Partech (2019) and Techpoint (2020) show.

This chapter has been divided into two components (see figure 3.1) to address the relationship between entrepreneurial finance and BG SMEs and the review of empirical evidence of the performance of EFMs. It starts by looking at the capital raising activities in Africa then narrows down to capital funding and government interventions in Nigeria.

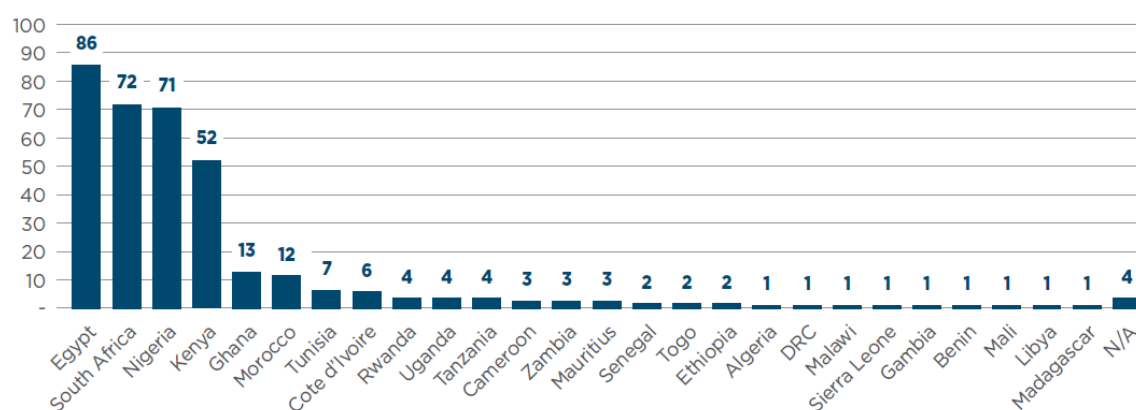
### Appendix 3.2: Africa and Capital Raising

Africa as a region is beginning to attract the interests of investors all over the world. Just like the MINT economies that Nigeria belongs to; the BRICS (Brazil, Russia, India, China and South Africa) economies also features South Africa. Other top regions of interest also include Kenya, Egypt, Rwanda, Uganda, and Senegal (Partech, 2019). Partech (2020) observes more African countries have been involved in venture capital raising in 2020 than in previous years. Partech (2020) finds that almost 50% of African countries participated in at least one round of funding in 2020 compared to just 18 African countries in 2019. Morocco, Tunisia, Mali, and Madagascar were listed as having 12%, 7%, 1%, and 1% respectively of the total capital raised (see figure 3.2) (Partech, 2020). The report acknowledges that the entrepreneurial finance activities and capital raising in Africa is beginning to witness more disclosures unlike in the past. More than half of the equity raised in 2019 was disclosed publicly. This is a welcome development that will create an enabling environment for academics and professionals to review practices, progress, and challenges in accessing entrepreneurial finance.

Partech (2019) reports that African start-ups in the tech sector raised US\$2.02billion in 2019 which was a +74% growth from the previous year. This sum was raised by 234 tech companies from 250 equity rounds (Partech, 2019). In 2020, the records show that the amount raised by the sector was US\$1.43billion (Partech, 2020). It is believed that the COVID-19 pandemic played a major role in the decline of capital raised in the tech sector in Africa. However, the number of deals and the number of companies that were recipients of these equity funding did not reduce but increased. The number of deals went from 250 in 2019 to 359 in 2020 and was closed by 347 tech start-ups in Africa (Partech, 2020).

The report highlighted that Nigeria and South Africa attracted the most funding and deal with 37% (US\$747) of funding going to Nigeria and 26% of deals (66 deals) going to South Africa (Partech, 2019) (see fig 3.2 and 3.3). This changed in 2020 with Egypt closing 86 deals which were the most in the year. Nigeria remained at the top of African countries attracting the most capital in the tech sector with 21% (US\$307million) of the total sum raised (Partech, 2020).

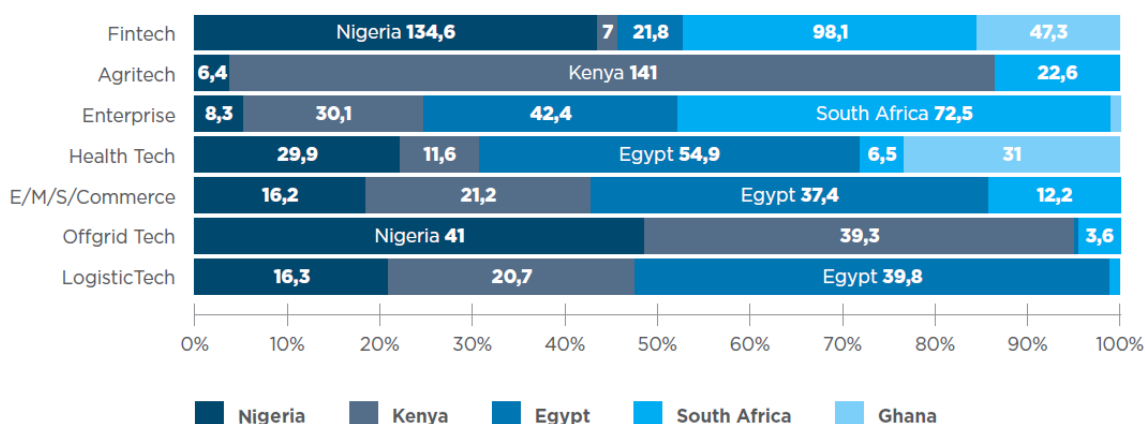
**Figure 3.2: 2020 Africa Tech VC - Number of Equity Rounds Per Country**



*Source: Partech (2020)*

As noted earlier, the Partech report only focuses on the tech sector. Notwithstanding, three core areas were identified as the investment segments for the total funds raised in 2019. The B2b & Tech adoption segment accounted for 16.1% of the total funds raised, while the online & mobile consumer services segment and the financial inclusion segment accounted for 29.3% and 54.5% respectively (Partech, 2019). The financial inclusion segment has been propelled by Fintech, an innovative industry that is growing in Africa. Partech (2020) reveals that other key sectors have been seen to digitalize their operations thereby evolving their business model. The report identified the growth of the agritech segment which raised US\$179million in 2020.

**Figure 3.3: 2020 Africa Tech IVC – Equity Funding by Country in Top Verticals (US\$M, in %)**



*Source: Partech (2019)*

The capital raising landscape of the continent suggests that the region is being seen by both foreign and local EFMs as a region with great prospects. The Techpoint report focuses on the funding and capital raising activities in Nigeria. This highlights the type of EFMs and amounts that have been injected into BG SMEs and other start-ups and SMEs in Nigeria.

### Appendix 3.3: Nigerian Start-up/SME Funding

The previous section aligns with Techpoint (2019) claims by highlighting the investment activities in the technological sector in Africa.

The Nigerian start-up ecosystem can be traced to the launch of Dealdey a deals and coupons marketplace in 2011 and the establishment of the Co-creation Hub (CcHUB) also in 2011 (Techpoint, 2019). Credit is also due to the Nigerian film industry - Nollywood content streaming platform, iROKOTv which raised \$3million in investment funds from Tiger Global and launched in 2011 (Techpoint, 2019). Techpoint (2019) notes that there were popular firms that had existed and utilized the

internet space before the above companies that launched in 2011, however, these firms launching in 2011 made the difference in the start-up growth in Nigeria.

The CcHUB provided a growth capital fund which some start-ups have benefitted from. The co-founders of iROKOTv in a bid to boost the development of other start-up firms in Nigeria created SPARK.ng which was a \$2.5million early-stage investment funding (Techpoint, 2019). This fund supported other start-up firms at their early stage to bridge their funding gap and achieve their business goals. Some firms that benefitted from SPARK.ng's early-stage fund include Propertypro.ng, Drinks.ng, Paystack and Hotels.ng.

Techpoint (2019) reports that 147 startups raised over \$377.4million in over 164 funding deals in 2019 which was twice the amount raised in 2018. In 2020, despite the hard impacts of the coronavirus pandemic and multiple lockdowns of the borders and movement within Nigeria, \$120.6million was raised by 50 startup companies. The report notes that the majority of the investment funds were provided by cross-border/foreign investors, which amounted to a little over \$357.8million whilst \$19.5million was raised locally. Though contributing just about 5% of the investment funds, local investors were involved in more funding deals than foreign investors (Techpoint, 2019). The investment funds raised were provided under different funding types. The Techpoint (2019) reports that the funding was raised as grants, pre-seed funds, seed, series A, series B, series D, convertible notes, and debt financing. Some other funds raised within the year were not captured under any of the funding types listed and were recorded under the 'unspecified' funding type.

The investment funds were raised by firms in different sectors of the economy. The financial services sector attracted the most investors with the services and mobility &

logistics sectors following at number 3 and 4 respectively (Techpoint, 2019). Other sectors featured per ranking include energy, healthcare, education, agriculture, ICT, online retail, real estate, and hardware (see table 3.1).

**Table 3.1: Breakdown of 2019 Nigerian Startup Funding by Sector**

Ranking	Description	Sector No of Deals	Value (\$ 000)
1	Financial services	34	192,687
2	Services	8	100,602
3	Mobility & Logistics	8	42,765
4	Energy	8	29,190
5	Healthcare	16	6,391
6	Education	15	3,506
7	Agriculture	14	1,518
8	ICT	50	282
9	Online retail	5	233
10	Real Estate	4	156
11	Hardware	2	30

*Source: Techpoint (2019)*

Techpoint (2019) explains that the services sector has been described as a combination of services, security, hospitality, and legal, whilst hardware refers to the manufacturing sector, and finally waste management was registered under energy.

Techpoint (2019) identified funding from Tony Elumelu Foundation as a major grant provider for 47 of the 50 ICT deals. In previous research conducted by the researcher, foundations and trusts were identified as a possible form of entrepreneurial finance model that could be beneficial to companies seeking external finance (Nwankwo, 2017). The Techpoint report highlights these external funding from foundations as grants. Other grant providers identified include First City Monument Bank, CcHUB which provided growth capital grants in partnership with Facebook Accelerator, Enhancing Financial Innovation and Access (EFInA), ARN Labs, and Union Bank. Grants have been identified as a popular source of funding for startups with 105 of the 147 funding deals in 2019 being grants. Further analysis shows that those deals only raised \$3,3million, 0.9% of the total funds raised in the year (Techpoint, 2019). It

therefore can be deducted that the amount raised by individual companies was significantly smaller than the amounts raised by their peers in other funding types.

This thesis makes note of the funding activities to justify the notion that BG SMEs in Nigeria have access to these EFMs and thus emphasizing the validity and value of the research aim. Government grants and Banks are two noteworthy EFMs that have supported BG SMEs in Nigeria and are discussed in detail below.

#### **Appendix 3.4: Deposit Banks and Financing**

Nwoye (2008) reveals that deposit banks are SMEs' most economical source of borrowed finance. Adelekan et al. (2019) add that deposit banks are also the largest providers of funding to SMEs in Nigeria. This stems from the nature of funds that deposit banks are willing to give, and the limited choices SMEs have in accessing finances. Deposit banks are more willing to provide short-term loans, working capital, or bridge financing, or over-drafts and this is mainly because the funds the banks are owned by bank customers are subject to a demand for withdrawal at any time (Adelekan et al 2020). For this reason, they tend to view long long-term finance as a risk and would usually need acceptable collateral to be able to provide longer terms loans, which many SMEs do not have (Adelekan et al 2019).

Typically, banks use the 5CS of credit (character, capacity, capital, conditions, and collateral) in evaluating loan requests (Adelekan, et al. 2019). The character of the borrower is seen as an integral assessment criterion that reflects the borrower's judgment of their business prospects and their integrity in being able to pay back the loan (Adelekan et al 2019). The capacity criterion weighs the borrower's ability to repay the loan being requested during the time (Adelekan et al. 2019). This can be ascertained from the SMEs business plans or proposal: Financials statements or



transaction history. Deposits banks require SMEs to provide evidence that shows they have a strong capital base that generates revenue cash to pay back loans (Adelekan et al.2009). They also need to know that the SMEs have the required collateral to secure the loan. Adelekan et al. (2019) note that in a research survey conducted by the Manufacturers Association of Nigeria (MAN) it was found that deposit banks are less likely to provide medium and long-term loans for projects thus favouring short-term financing.

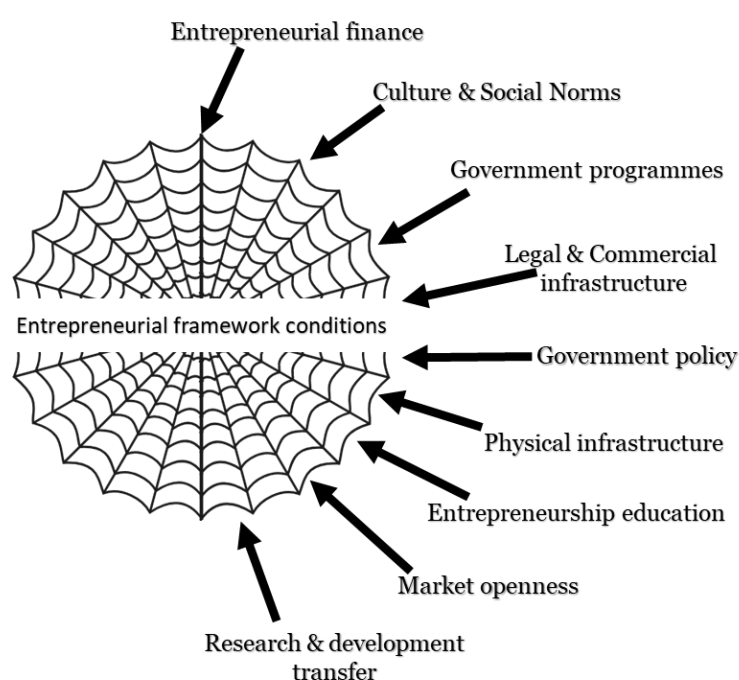
### **Appendix 3.5: Environmental Ecosystem of Nigeria**

An ecosystem is a composition of various entities, that must exist for it to function effectively (Ratten, 2020). This is just like a system with different parts working at different levels but contributing to the sum of the whole system. Susan & Acs (2017) described the ecosystem as a network of entities with varying behaviours interacting with each other but can have different sets of interdependences in different environmental contexts. Entrepreneurs can find themselves in different contexts and these contexts could include the region they operate, the business cycle (Hussein et. al., 2006), the entrepreneurial cycle (Ratten, 2020), and each of these contexts have different levels and types of information (Demil, et al., 2018). To put it differently, the entities of an ecosystem can change depending on the environmental conditions (Ratten, 2020).

This research is aimed at statistically analysing the impact EFMs have on the performance and outcome of BG SMEs, within the environmental context of Nigeria. This research holds the notion of several research papers in the subject area, for example (Mendy, et al., 2021; Ratten, 2020), that environmental ecosystem can impact the output of the research variables. This section reviews literature around the environmental ecosystem of Nigeria. Nigeria as an environmental ecosystem of BG

SMEs being investigated in this research is influenced by nine entrepreneurial framework conditions which are illustrated in *figure 2.3* (GEM, 2016). For the development of a healthy and conducive business environment, it is expected that these nine conditions should be optimally balanced.

**Figure 2.3: The nine entrepreneurial framework conditions**



*Source: Adapted from Gem (2016)*

These entrepreneurial frameworks affect each economy and each country's institutions differently. For example, Jimenez et al. (2014) articulate that local and international firms will need to conduct an increased political risk assessment (PRA) when engaging in transactions within the African market. The political risks in Africa and Nigeria particularly have remained a key determinant affecting business operations, growth, and development (UNCTAD, 2016). Thus, the impact levels of

these frameworks in each environmental ecosystem can affect the outcome and performance of BG SMEs.

Nigeria has been selected as a context of this research as it was judged as one of the fastest-growing economies in the world in 2015 (Mendy, et al., 2021), and is described as the giant of Africa (Zulu, 2009). Though the country has experienced a recession in recent years, it is believed to be a model nation representing similar emerging economies in Africa, Asia, and South America.

Nigeria also actively and consciously aims to promote international trade, supporting local firms to internationalization by engaging in bilateral and multilateral trade agreements. Nigeria is a member of several global trade associations, including the Organization of Petroleum Exporting Countries (OPEC), World Trade Organization (WTO), the International Monetary Fund (IMF), and a free trade member of the African Continental Free Trade Area (AfCFTA). In addition, being a member state of ECOWAS and AU, it agrees to free movement of goods and services across its borders.

The entrepreneurial frameworks are important ecosystem factors that have been used to justify the selection of Nigeria in this research. The researcher goes on to examine the export and business environment in Nigeria which are key features that directly influence BG SMEs.

## Appendix 4.1: Research Questionnaire

Q. number	Question	Options	
<b>Introduction</b>			
<b>1</b>	<b>Consent Questions</b>		
<b>2</b>	When was your company established?	Less than 5 years	
		5 - 10 years	
		Over 10 years	
<b>3</b>	Where is the headquarters of the company? - Selected Choice	Nigeria	
<b>4</b>	How many countries does your company operate in either through positioning, delivery of products, or services (Including the country you are headquartered)?	1	
		2 - 4	
		Over 5 countries	
<b>5</b>	From the time of establishing the company, when during the life of the business did you begin to operate internationally?	Between 0 - 3 years	
		Between 3 - 4 years	
		Between 4 - 5 years	
		Over 5 years	
		Not applicable	
<b>6</b>	When during these periods did your company obtain its first external funding within the first 60 months (5 years) of establishing the company?	1 - 12 months	
		12 - 24 months	
		24 - 36 months	
		36 - 48 months	
		48 - 60 months	
		Did not obtain external funding within this period	
<b>7</b>	Approximately, what percentage of your company's total turnover in 2019 is accounted for by your company's international operations?	Less than 30%	
		between 30% - 50%	
		Over 50%	
<b>Company</b>			
<b>8</b>	How many people does your company currently employ either full or part-time at all its locations?	1 -9 employees	
		10 - 49 employees	
		50 - 249 employees	
		250 employees or more	
<b>9</b>	What is the main activity of your company?		
<b>10</b>		Between N1 to N25million	

	What was the annual turnover of your company in 2019?	more than N25million and up to N50million
		more than N50million and up to N100million
		more than N100million and up to N200million
		over N200million

Management		
11	Do you currently hold any of these roles in the company?	Founder
		CEO/Managing Director
		Chief Financial Officer (CFO)
		Manager
		Vice President

12	Did you previously hold any of these roles in the company which you do not currently hold?	Founder
		CEO/Managing Director
		Chief Financial Officer (CFO)
		Manager
		Vice President
		Not applicable

13	What is your area of expertise?	Finance
		Business development
		ICT
		Engineering
		Sales
		Health practitioner
		Human resources
		Legal
		Other

14	How many years of relevant work experience do you have?	between 1 - 3 years
		between 3 - 5 years
		between 5 - 7 years
		between 7 - 10 years
		Over 10 years

15	My knowledge of this industry helps me address funding requirements in my company	Strongly agree
		Somewhat agree
		Neither agree nor disagree
		Somewhat disagree
		Strongly disagree

16	What is your highest educational qualification?	Senior School Certificate
		Diploma
		Bachelors or equivalent
		Masters or equivalent
		PhD/DBA or equivalent
		Professional Qualification

17		Strongly agree
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	My academic qualifications have helped me address funding requirements in my company	Somewhat agree
		Neither agree nor disagree
		Somewhat disagree
		Strongly disagree

18	What is your age?	18 - 24
		25 - 34
		35 - 44
		45 - 54
		55 or older

Funding		
19	Which of the following external funding options do you know about?	One
		Two - five
		More than five

20	Which of the following external funding options did your company apply to within the first 60 months (5 years) of the company's establishment?	Crowdfunding
		Independent venture capital
		Government venture capital
		Philanthropic venture capital
		Corporate venture capital
		Bank
		Government grant
		Initial Public Offering (IPO)
		Initial Cryptocurrency Offering (ICO)
		Business angels
		Accelerators
		Intellectual property (IP) funding
		Foundational funds
		Private sector grants
		Supplier credit
		Project finance
		Other/More than one

21	Which one of the following external funding sources did your company obtain its first funding from?	Crowdfunding
		Independent venture capital
		Government venture capital
		Philanthropic venture capital
		Corporate venture capital
		Bank
		Government grant
		Initial Public Offering (IPO)
		Initial Cryptocurrency Offering (ICO)
		Business angels
		Accelerators
		Intellectual property (IP) funding
		Private sector grant
		Project finance
		Supplier Credit
		Other

		None
22	What key factors did you consider when planning to obtain external funding?	Problem solving, Innovation and technology Size of fund required, project size, terms of finance Equity and Debt Fund providers - accessibility, transparency, credibility and integrity Other
23	Prior to accessing your first external funding, how did you fund the operations of the company?	Personal savings Family and friends Shareholders contribution Initial revenue Other sources
24	In the future, I expect to plan the company's external funding requirements differently	Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree
25	In the future, I would likely approach the following sources for funding	Crowdfunding Independent venture capital Government venture capital Philanthropic venture capital Corporate venture capital Bank Government grant Initial Public Offering (IPO) Initial Cryptocurrency Offering (ICO) Business angels Accelerators Intellectual property (IP) funding Supplier credit Private sector grants Project finance Customer upfront payment
26	What new/other external fundings have you obtained since the first external funding obtained?	
27	What was your role in the company's first round of funding?	I led the process of obtaining funding It is the responsibility of others and I take a supporting role I was not part of the company
28		Crowdfunding Independent venture capital

	Prior to the company accessing its first external funding, which of the following was the company unsuccessful in obtaining?	Government venture capital
		Philanthropic venture capital
		Corporate venture capital
		Bank
		Government grant
		Initial Public Offering (IPO)
		Initial Cryptocurrency Offering (ICO)
		Business angels
		Accelerators
		Intellectual property (IP) funding

29	Would you exchange a portion of your shares (equity) for the opportunity to access growth finance in the future?	Yes
		No
		Prefer not to say

Firm Structure		
30	Within the first three years of the company receiving its first external funding, how did the objectives of the company change?	The objectives of the company changed as a result of the external funding
		The objectives of the company changed irrespective of the external funding
		The objectives of the company did not change
		Did not receive external funding

31	Was the management structure discussed during the negotiations with financiers/investors?	Yes
		No
		Prefer not to say

32	Within the first three years of the company receiving its first external funding, how did the management team of the company change?	Over 31% of the management team of the company changed based on the request of the external finance provider
		Between 21% - 30% of the management team of the company changed based on the request of the external finance provider
		The management team of the company did not change/changed but not at the request of the external finance provider
		Between 11% - 20% of the management team of the company changed based on the request of the external finance provider
		Between 1% - 10% of the management team of the company changed based on the request of the external finance provider

33		Positive impact on performance
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	How did the change in management structure impact the performance of the company?	No impact on performance
		Negative impact on performance

34	Within the first three years of the company receiving its first external funding, how did the composition of the board of the company change?	Over 31% of the company board changed based on the request of the external finance provider
		Between 21% - 30% of the company board changed based on the request of the external finance provider
		The company board did not change/changed but not at the request of the external finance provider
		Between 11% - 20% of the company board changed based on the request of the external finance provider
		Between 1% - 10% of the company board changed based on the request of the external finance provider

35	If there was no change, how did this affect the performance of the company?	Positive impact on performance
		No impact on performance
		Negative impact on performance

Social or Ethical Objectives		
36	Does the company have any social or ethical objectives?	My company has social and ethical objectives and creates social value
		My company has social and ethical objectives but does not currently create a social value
		My company does not have any social and ethical objective but creates social value
		My company does not have any social and ethical objective and does not create social value

37	Describe your company's social or ethical objectives?	
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38	Does your company calculate the social return on investment (SROI)?	Yes
		No
		Prefer not to say

39	Select the statement that best describes your social return on investment (SROI)	For every N1 spent on creating social value we received in returns more than N1
		For every N1 spent on creating social value we received in returns equal to N1
		For every N1 spent on creating social value we received in returns less than N1

		Prefer not to say
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40_1	Did your company consider the social or ethical objectives of the company when sourcing for funding?	Yes
		No
		Prefer not to say

40_2	Was the social or ethical objective discussed when negotiating for funding?	Yes
		No
		Prefer not to say

40_3	Did investors want feedbacks/updates on the company's progress on its social or ethical objectives?	Yes
		No
		Prefer not to say

40_4	Was there a benchmark discussed with investors to ascertain the successes of achieving the social & ethical goals?	Yes
		No
		Prefer not to say

41	Within three years of obtaining the first external finance, how did the company's performance in achieving its social and ethical objectives change?	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased more than 20%

42	The investors played an active role in the company's drive to achieve social or ethical objectives	Strongly agree
		Somewhat agree
		Neither agree nor disagree
		Somewhat disagree
		Strongly disagree

Company Performance		
43	How many times has your company obtained external funding since being established?	1
		2
		3-5
		More than 5
		None

44_1	Company's profit	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%

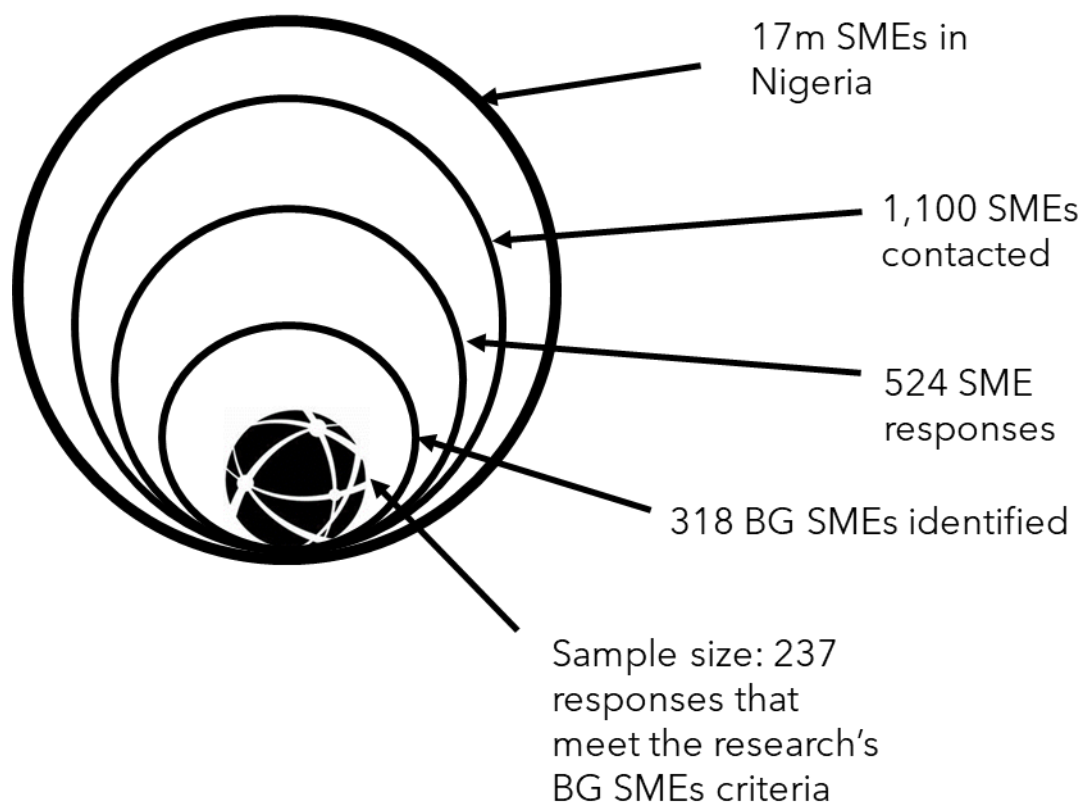
44_2	Company's sales turnover	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%

44_3	Company's net profit margin	Increased over 20%
		Increased less than 20%

		Did not change
		Decreased less than 20%
		Decreased over 20%
44_4	Company's return on investment (ROI)	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%
44_5	Company's return on equity (ROE)	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%
44_6	Company's return on asset (ROA)	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%
44_7	Company's return on sales (ROS)	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%
44_8	Company's market share	Increased over 20%
		Increased less than 20%
		Did not change
		Decreased less than 20%
		Decreased over 20%

#### Appendix 4.2: Sample Size representation

This research focuses on BG SMEs that obtained EFM within the early phases of their business life cycle. BG SMEs differs from typical SMEs in their approach to internationalisation, as they pursue an aggressive and rapid international expansion strategy either from their inception or shortly after establishment. However, since there is no specific database exclusively dedicated to BG SMEs, this research had to identify these companies from an available dataset of SMEs.

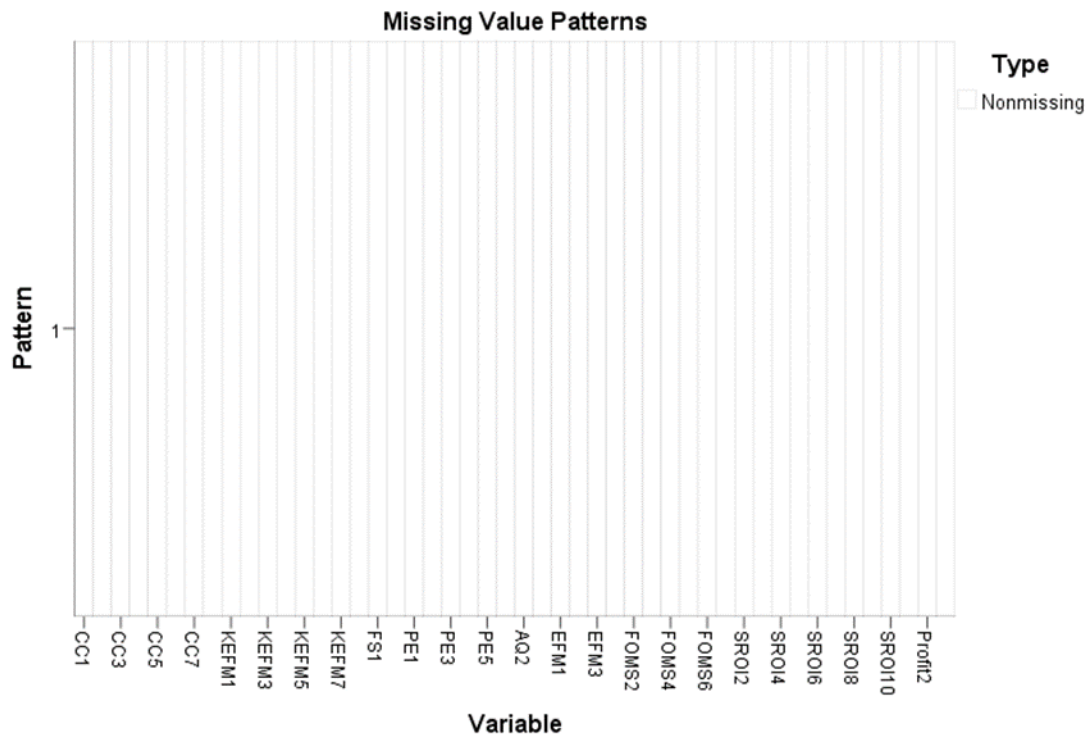


To identify the core population of BG SMEs for the research, the researcher used the Nigerian SME data list collated from two sources: the Bank of Industry (BOI) and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN). Since there is no single database that specifically lists SMEs or BG SMEs in Nigeria, the researcher aggregated information from these two sources to form the sample for their research.

## Appendix 5.1: Missing Data Patterns

The missing values were computed through the Missing Value Analysis and the Multiple Imputation under the 'Analyze' tab in SPSS data view containing the research data entries.

Figure: Missing Data Patterns



## Appendix 5.2: Identifying Outliers

S/N	Zscore: Firm Objectives	Zscore: Management Structure 1	Zscore: Management Structure 2	Zscore: Management Structure 3	Zscore: Management Structure 4	Zscore: Management Structure 5	Zscore: Return on Equity	Zscore: Return on Asset	Zscore: Market Share
1	0.40774	-1.03983	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
2	0.40774	-1.03983	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
3	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
4	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
5	0.40774	0.46285	-0.7794	1.1313	-0.27445	0.02554	-0.99034	-1.03717	-0.02429
6	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
7	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
8	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
9	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
10	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
11	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
12	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
13	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
14	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
15	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
16	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
17	0.40774	1.96553	1.5588	-0.04466	-0.27445	1.03446	0.40675	0.37553	-1.46353
18	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	1.80383	0.37553	-0.02429

19	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-1.46353
20	0.40774	0.46285	0.3897	-1.22062	-0.27445	1.03446	1.80383	-1.03717	-1.46353
21	0.40774	-1.03983	0.3897	-1.22062	-0.27445	1.03446	-0.99034	0.37553	-0.02429
22	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-0.02429
23	-1.38177	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
24	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
25	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	-0.02429
26	0.40774	0.46285	-0.7794	1.1313	-0.27445	-0.98337	1.80383	1.78823	-0.02429
27	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-1.46353
28	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	1.41495
29	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
30	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-1.46353
31	0.40774	0.46285	1.5588	-1.22062	-0.27445	1.03446	-0.99034	-1.03717	-0.02429
32	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	1.78823	-0.02429
33	0.40774	-1.03983	-0.7794	1.1313	1.02645	-0.98337	0.40675	0.37553	1.41495
34	0.40774	0.46285	0.3897	-1.22062	1.02645	1.03446	1.80383	1.78823	1.41495
35	0.40774	0.46285	0.3897	-1.22062	1.02645	1.03446	1.80383	1.78823	1.41495
36	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-1.46353
37	0.40774	-1.03983	0.3897	-1.22062	-0.27445	1.03446	-0.99034	-1.03717	-1.46353
38	-1.38177	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-1.46353
39	-1.38177	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-2.44987	-2.90276
40	0.40774	-1.03983	0.3897	-1.22062	1.02645	1.03446	-0.99034	-1.03717	-1.46353
41	0.40774	0.46285	1.5588	-1.22062	-0.27445	1.03446	-0.99034	-1.03717	-0.02429

42	0.40774	0.46285	-0.7794	1.1313	-0.27445	0.02554	-0.99034	0.37553	-0.02429
43	0.40774	0.46285	-0.7794	1.1313	-0.27445	-0.98337	-0.99034	-1.03717	-1.46353
44	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
45	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
46	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
47	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
48	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	-1.46353
49	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-1.46353
50	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
51	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
52	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
53	0.40774	0.46285	1.5588	-1.22062	1.02645	1.03446	-2.38742	-2.44987	-1.46353
54	0.40774	0.46285	1.5588	-1.22062	1.02645	1.03446	-0.99034	-1.03717	-2.90276
55	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
56	0.40774	0.46285	1.5588	-1.22062	1.02645	1.03446	0.40675	0.37553	-0.02429
57	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
58	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
59	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
60	0.40774	0.46285	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
61	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
62	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
63	0.40774	-1.03983	1.5588	-1.22062	1.02645	1.03446	-2.38742	-2.44987	-2.90276
64	-1.38177	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-0.02429



65	-3.17128	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-1.46353
66	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
67	-3.17128	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-0.02429
68	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
69	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-0.02429
70	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
71	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
72	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
73	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
74	-3.17128	0.46285	0.3897	-1.22062	1.02645	1.03446	-0.99034	0.37553	-0.02429
75	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-0.02429
76	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
77	-1.38177	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-1.46353
78	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
79	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
80	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
81	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
82	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	-1.03717	1.41495
83	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-1.46353
84	0.40774	0.46285	1.5588	-0.04466	-0.27445	1.03446	0.40675	-1.03717	-1.46353
85	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-0.02429
86	-3.17128	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
87	-1.38177	-1.03983	0.3897	-1.22062	1.02645	1.03446	-0.99034	0.37553	-0.02429

88	0.40774	0.46285	0.3897	-1.22062	-0.27445	1.03446	0.40675	-1.03717	-0.02429
89	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
90	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
91	-1.38177	0.46285	0.3897	-0.04466	1.02645	1.03446	0.40675	-1.03717	-1.46353
92	0.40774	-1.03983	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
93	0.40774	-1.03983	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
94	0.40774	-1.03983	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
95	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
96	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
97	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
98	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
99	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
100	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
101	0.40774	0.46285	-0.7794	1.1313	-0.27445	0.02554	-0.99034	-1.03717	-0.02429
102	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
103	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
104	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
105	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	-0.02429
106	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	-0.02429
107	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
108	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
109	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
110	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	0.02554	1.80383	1.78823	1.41495

111	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
112	0.40774	0.46285	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
113	0.40774	1.96553	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
114	0.40774	-1.03983	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
115	0.40774	0.46285	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
116	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
117	0.40774	-1.03983	1.5588	-0.04466	1.02645	1.03446	0.40675	0.37553	-0.02429
118	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
119	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
120	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
121	0.40774	0.46285	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
122	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
123	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
124	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
125	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
126	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
127	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-0.02429
128	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	-0.99034	-1.03717	1.41495
129	-3.17128	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-0.02429
130	0.40774	-1.03983	0.3897	-1.22062	-0.27445	1.03446	0.40675	0.37553	-0.02429
131	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
132	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
133	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429

134	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
135	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
136	-3.17128	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
137	0.40774	0.46285	-0.7794	1.1313	-0.27445	-0.98337	1.80383	1.78823	-0.02429
138	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-1.46353
139	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-1.46353
140	-1.38177	0.46285	0.3897	-1.22062	-0.27445	1.03446	0.40675	0.37553	-1.46353
141	0.40774	0.46285	0.3897	-0.04466	-0.27445	1.03446	-0.99034	-1.03717	-1.46353
142	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-2.90276
143	-1.38177	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-0.02429
144	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
145	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
146	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
147	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
148	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	-0.02429
149	0.40774	0.46285	0.3897	-1.22062	1.02645	1.03446	1.80383	1.78823	1.41495
150	0.40774	-1.03983	0.3897	-0.04466	-0.27445	1.03446	-0.99034	0.37553	-1.46353
151	-3.17128	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-0.02429
152	-1.38177	-1.03983	1.5588	-1.22062	-0.27445	1.03446	-0.99034	-1.03717	-0.02429
153	-1.38177	0.46285	1.5588	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-1.46353
154	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	1.41495
155	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	1.41495
156	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-0.02429

157	-3.17128	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
158	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
159	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
160	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-1.46353
161	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
162	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-1.46353
163	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
164	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-1.46353
165	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-1.46353
166	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	-0.99034	-1.03717	-0.02429
167	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	1.41495
168	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	1.41495
169	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	1.41495
170	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	1.80383	1.78823	1.41495
171	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
172	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	0.37553	-0.02429
173	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
174	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
175	0.40774	1.96553	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
176	0.40774	-1.03983	1.5588	-1.22062	1.02645	1.03446	-0.99034	-1.03717	-1.46353
177	0.40774	-1.03983	1.5588	-1.22062	1.02645	1.03446	-2.38742	-1.03717	-1.46353
178	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
179	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495

180	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
181	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
182	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	1.41495
183	0.40774	0.46285	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
184	0.40774	-1.03983	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	1.41495
185	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-1.46353
186	0.40774	1.96553	1.5588	-0.04466	1.02645	1.03446	0.40675	0.37553	1.41495
187	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
188	0.40774	1.96553	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
189	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
190	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
191	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
192	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
193	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
194	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	-0.02429
195	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
196	0.40774	-1.03983	1.5588	-0.04466	-0.27445	0.02554	-0.99034	-1.03717	-1.46353
197	0.40774	1.96553	0.3897	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
198	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	0.40675	-1.03717	-0.02429
199	0.40774	-1.03983	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
200	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
201	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	0.40675	0.37553	-0.02429
202	0.40774	0.46285	0.3897	-0.04466	-0.27445	1.03446	-0.99034	-1.03717	-0.02429

203	0.40774	0.46285	0.3897	-1.22062	-0.27445	1.03446	0.40675	-1.03717	1.41495
204	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	-0.99034	-2.44987	-0.02429
205	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-1.46353
206	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
207	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-0.02429
208	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
209	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
210	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
211	-3.17128	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
212	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-1.46353
213	0.40774	1.96553	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
214	0.40774	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-0.02429
215	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	0.37553	-0.02429
216	0.40774	-1.03983	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
217	0.40774	1.96553	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
218	-1.38177	0.46285	0.3897	-1.22062	1.02645	1.03446	-0.99034	0.37553	-0.02429
219	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
220	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
221	0.40774	-1.03983	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
222	0.40774	-1.03983	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
223	0.40774	-1.03983	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
224	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
225	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429

226	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
227	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-1.46353
228	0.40774	-1.03983	-0.7794	1.1313	1.02645	1.03446	-0.99034	-1.03717	-0.02429
229	0.40774	-1.03983	0.3897	-1.22062	-0.27445	-0.98337	0.40675	0.37553	-0.02429
230	0.40774	0.46285	-0.7794	1.1313	-0.27445	-0.98337	0.40675	0.37553	-0.02429
231	0.40774	0.46285	-0.7794	1.1313	1.02645	1.03446	0.40675	0.37553	-0.02429
232	0.40774	1.96553	1.5588	-0.04466	-0.27445	-0.98337	1.80383	1.78823	1.41495
233	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	0.37553	-1.46353
234	-1.38177	-1.03983	-0.7794	-1.22062	-1.57535	-0.98337	0.40675	-1.03717	-0.02429
235	0.40774	0.46285	-0.7794	-1.22062	-1.57535	-0.98337	-0.99034	-1.03717	-0.02429
236	-1.38177	0.46285	0.3897	-1.22062	1.02645	-0.98337	-0.99034	-1.03717	-0.02429



### Appendix 5.3: Multicollinearity Check and Variable Correlation

**Table: Multicollinearity Check**

		Indepe ndent venture capital	Govern ment venture capital	Philanth ropic venture capital	Corpor ate ventur e capital	Bank	Govern ment grant	Busine ss angels	Acceler ators	Project finance	Other	Crowdfu nding
Indepen dent venture capital	Pearso n Correla tion	1	-0.046	-0.058	-.233**	-.171**	-0.089	-0.075	-0.069	-0.035	-0.058	-0.065
	Sig. (2- tailed)		0.483	0.372	0.000	0.008	0.170	0.249	0.292	0.589	0.372	0.316
	N	237	237	237	237	237	237	237	237	237	237	237
Govern ment venture capital	Pearso n Correla tion	-0.046	1	-0.027	-0.110	-0.081	-0.042	-0.035	-0.032	-0.017	-0.027	-0.031
	Sig. (2- tailed)	0.483		0.674	0.092	0.216	0.519	0.588	0.620	0.799	0.674	0.637
	N	237	237	237	237	237	237	237	237	237	237	237
Philanth ropic venture capital	Pearso n Correla tion	-0.058	-0.027	1	-.140*	-0.103	-0.054	-0.045	-0.041	-0.021	-0.035	-0.039
	Sig. (2- tailed)	0.372	0.674		0.031	0.115	0.412	0.490	0.528	0.746	0.593	0.548
	N	237	237	237	237	237	237	237	237	237	237	237

Corporate venture capital	Pearson Correlation	-.233**	-0.110	-.140*	1	-.411**	-.214**	-.180**	-.165*	-0.085	-.140*	-.157*
	Sig. (2-tailed)	0.000	0.092	0.031		0.000	0.001	0.005	0.011	0.194	0.031	0.016
	N	237	237	237	237	237	237	237	237	237	237	237
Bank	Pearson Correlation	-.171**	-0.081	-0.103	-.411**	1	-.158*	-.132*	-0.121	-0.062	-0.103	-0.115
	Sig. (2-tailed)	0.008	0.216	0.115	0.000		0.015	0.042	0.062	0.340	0.115	0.076
	N	237	237	237	237	237	237	237	237	237	237	237
Government grant	Pearson Correlation	-0.089	-0.042	-0.054	-.214**	-.158*	1	-0.069	-0.063	-0.032	-0.054	-0.060
	Sig. (2-tailed)	0.170	0.519	0.412	0.001	0.015		0.290	0.332	0.619	0.412	0.356
	N	237	237	237	237	237	237	237	237	237	237	237
Business angels	Pearson Correlation	-0.075	-0.035	-0.045	-.180**	-.132*	-0.069	1	-0.053	-0.027	-0.045	-0.051
	Sig. (2-tailed)	0.249	0.588	0.490	0.005	0.042	0.290		0.415	0.676	0.490	0.438
	N	237	237	237	237	237	237	237	237	237	237	237
Accelerators	Pearson Correlation	-0.069	-0.032	-0.041	-.165*	-0.121	-0.063	-0.053	1	-0.025	-0.041	-0.046

	Sig. (2-tailed)	0.292	0.620	0.528	0.011	0.062	0.332	0.415		0.702	0.528	0.478
	N	237	237	237	237	237	237	237	237	237	237	237
Project finance	Pearson Correlation	-0.035	-0.017	-0.021	-0.085	-0.062	-0.032	-0.027	-0.025	1	-0.021	-0.024
	Sig. (2-tailed)	0.589	0.799	0.746	0.194	0.340	0.619	0.676	0.702		0.746	0.716
	N	237	237	237	237	237	237	237	237	237	237	237
Other	Pearson Correlation	-0.058	-0.027	-0.035	-.140*	-0.103	-0.054	-0.045	-0.041	-0.021	1	-0.039
	Sig. (2-tailed)	0.372	0.674	0.593	0.031	0.115	0.412	0.490	0.528	0.746		0.548
	N	237	237	237	237	237	237	237	237	237	237	237
Crowdfunding	Pearson Correlation	-0.065	-0.031	-0.039	-.157*	-0.115	-0.060	-0.051	-0.046	-0.024	-0.039	1
	Sig. (2-tailed)	0.316	0.637	0.548	0.016	0.076	0.356	0.438	0.478	0.716	0.548	
	N	237	237	237	237	237	237	237	237	237	237	237

## Appendix 5.4: Descriptive Data Analysis

### 5.4.1: Criteria and Knowledge Check (n = 237)

Item	Categories	No. (n)	Percentage
<b>When company was established</b>	5 - 10 years	146	61.6
	Less than 5 years	91	38.4
<b>Company Headquarters</b>	Nigeria	100	100
<b>Countries of operation</b>	Over 5 countries	109	46.0
	2 - 4 countries	128	54.0
<b>Start of international operations</b>	Between 0 - 3 years	116	48.9
	Between 3 - 4 years	91	38.4
	Between 4 - 5 years	30	12.7
<b>Obtained external funding</b>	Yes	237	100.0
<b>Companies' turnover from international operations</b>	Over 50%	99	41.8
	between 30% - 50%	137	57.8
	Less than 30%	1	.4
<b>Number of times firm accessed external finance (EFM)</b>	1x	134	56.5
	2x	77	32.5
	3-5x	26	11.0
	Primary (raw materials)	29	12.2
<b>Main activity of a company</b>	Secondary (Finished goods)	20	8.4
	Tertiary (Service sector)	142	59.9
	Quaternary	17	7.2
	Other	29	12.2

5.4.2 Table 5.14: Knowledge Check

Kefm 1	One	24	10.1
	Two - five	71	30.0
	More than five	142	59.9
Kefm 2	Personal savings and Shareholders' equity	144	60.8
	Family and friends	48	20.3
	Initial revenue and advance payments	36	15.2
Kefm 3	Others	9	3.8
	Strongly disagree	4	1.7
	Somewhat disagree	10	4.2
Kefm 4	Neither agree nor disagree	106	44.7
	Somewhat agree	64	27.0
	Strongly agree	53	22.4
Kefm 5	Crowdfunding	11	4.6
	Independent venture capital	54	22.8
	Government venture capital	19	8.0
Kefm 6	Philanthropic venture capital	3	1.3
	Corporate venture capital	76	32.1
	Bank	29	12.2
Kefm 7	Government grant	4	1.7
	Business angels	2	.8
	Accelerators	1	.4
Kefm 8	Private sector grants	2	.8
	Project finance	5	2.1
	Other or more than one	31	13.1
Kefm 9	Independent venture capital	1	.4
	Corporate venture capital	63	26.6
	Bank	20	8.4
Kefm 10	Accelerators	2	.8
	Private sector grants	1	.4
	Other	7	3.0
Kefm 11	Not applicable	143	60.3

	I led the process of obtaining funding	197	83.1
	It is the responsibility of others and I take a supporting role	31	13.1
Kefm 6	Not applicable/prefer not to say	9	3.8
	Crowdfunding	3	1.3
	Independent venture capital	10	4.2
	Government venture capital	2	.8
	Philanthropic venture capital	2	.8
	Corporate venture capital	13	5.5
Kefm 7	Bank	12	5.1
	Government grant	3	1.3
	Business angels	1	.4
	Accelerators	24	10.1
	Project finance	1	.4
	Other	1	.4
	Not applicable/prefer not to say	165	69.6
	Yes	77	32.5
Kefm8	No	156	65.8
	Prefer not to say	4	1.7

**5.4.3 Table 5.15: Descriptive Analysis of Firm Size**

Item	Categories	No. (n)	Percentage
<b>No of Employees</b>	1 -9 employees	18	7.6
	10 - 49 employees	104	43.9
	50 - 249 employees	105	44.3
	250 employees or more	10	4.2
	Between N1 to N25million	29	12.2
<b>Annual turnover 2019</b>	more than N25million and up to N50million	27	11.4
	more than N50million and up to N100million	85	35.9
	more than N100million and up to N200million	25	10.5
	over N200million	71	30.0

5.4.4 Table 5.16: Management Profile

Item	Categories	No. (n)	Percentage
<b>Current role</b>	Founder	24	10.1
	CEO/Managing Director	131	55.3
	Founder, CEO/Managing Director	43	18.1
	Vice President or CFO	13	5.5
	Manager	26	11.0
<b>Previous role</b>	Vice President or CFO	8	3.4
	Manager	22	9.3
	Not applicable	207	87.3
<b>Expertise</b>	Finance, Accounting, Banking	63	26.6
	Business development, sales, business strategy	75	31.6
	ICT, software	31	13.1
	Engineering	27	11.4
	Health practitioner	13	5.5
	Legal and Human Resources	19	8.0
	Other	9	3.8
<b>Current industry: years of experience</b>	between 1 - 3 years	4	1.7
	between 3 - 5 years	43	18.1
	between 5 - 7 years	31	13.1
	between 7 - 10 years	52	21.9
	Over 10 years	107	45.1
<b>Experience and funding</b>	Strongly disagree	8	3.4
	Somewhat disagree	9	3.8
	Neither agree nor disagree	61	25.7
	Somewhat agree	69	29.1
	Strongly agree	90	38.0
<b>Highest qualification</b>	Senior School Certificate	3	1.3
	Diploma	15	6.3
	Bachelors or equivalent	92	38.8
	Masters or equivalent	81	34.2
	PhD/DBA or equivalent	30	12.7
	Professional Qualification	16	6.8



#### 5.4.5 5.4.1 Descriptive Data – Control Variables

Item	Categories	No. (n)	Percentage
<b>Highest qualification</b>	Senior School Certificate	3	1.3
	Diploma	15	6.3
	Bachelors or equivalent	92	38.8
	Masters or equivalent	81	34.2
	PhD/DBA or equivalent	30	12.7
	Professional Qualification	16	6.8
<b>Educational qualification and funding</b>	Strongly disagree	7	3.0
	Somewhat disagree	13	5.5
	Neither agree nor disagree	67	28.3
	Somewhat agree	64	27.0
	Strongly agree	86	36.3
<b>Age</b>	18 - 24	5	2.1
	25 - 34	56	23.6
	35 - 44	125	52.7
	45 - 54	40	16.9
	55 or older	11	4.6

#### 5.4.6 5.4.2 Descriptive Data – Independent Variable

Item	Categories	No. (n)	Percentage
<b>EFMs applied to</b>	Crowdfunding	9	3.8
	Independent venture capital	12	5.1
	Government venture capital	6	2.5
	Philanthropic venture capital	2	.8
	Corporate venture capital	82	34.6
	Bank	31	13.1
	Government grant	8	3.4
	Business angels	10	4.2
	Accelerators	6	2.5
	Private sector grants	7	3.0
	Project finance	11	4.6
	More than one	53	22.4
<b>EFM obtained</b>	Crowdfunding	10	4.2
	Independent venture capital	21	8.9
	Government venture capital	5	2.1
	Philanthropic venture capital	8	3.4
	Corporate venture capital	85	35.9
	Bank	55	23.2
	Government grant	18	7.6
	Business angels	13	5.5
	Accelerators	11	4.6
	Project finance	3	1.3
	Other	8	3.4
<b>Factors considered in applying for EFM</b>	Problem solving	40	16.9
	Innovation and technology	64	27.0
	Accessibility to fund providers	61	25.7
	Size of fund required	68	28.7
	Project/business type (Industry & Sector)	4	1.7

#### 5.4.7 5.4.3 Descriptive Data Analysis – Dependent Variables (Firm Structure)

Item	Categories	No. (n)	Percentage
<b>Changes to the objective of BG SME</b>	The objectives of the company changed as a result of the external funding	16	6.8
	The objectives of the company changed irrespective of the external funding	22	9.3
	The objectives of the company did not change	199	84.0
<b>Negotiation of management composition</b>	Yes	100	42.2
	No	110	46.4
	Prefer not to say	27	11.4
<b>Changes to management composition</b>	The management structure of the company did not change	139	58.6
	The management structure of the company changed irrespective of the external funding	38	16.0
	The management structure of the company changed as a result of the external funding	60	25.3
<b>Impact of changes in management composition to performance</b>	No impact on performance	81	34.2
	Positive impact on performance	66	27.8
	Not applicable	90	38.0
<b>Changes to board composition</b>	Not applicable/Prefer not to say	50	21.1
	No	87	36.7
	Yes	100	42.2
<b>Impact of no changes to performance</b>	No impact on performance	119	50.2
	Positive impact on performance	5	2.1
	Not applicable	113	47.7

#### 5.4.8 5.4.4 Descriptive Data Analysis – Dependent Variables (SROI)

Item	Categories	No. (n)	Percentage
<b>Firms' social objectives</b>	My company does not have any social and ethical objective and does not create social value	36	15.2
	My company does not have any social and ethical objective but creates social value	111	46.8
	My company has social and ethical objectives but does not currently create a social value	11	4.6
	My company has social and ethical objectives and creates social value	61	25.7
	Not applicable/Prefer not to say	18	7.6
<b>Broad description of social objectives</b>	Health & safety	13	5.5
	Educational contributions, gender equality	27	11.4
	Innovation and technology dev, service delivery, Infr deve	122	51.5
	Local community dev, CSR	14	5.9
	Clean energy, clean energy, climate and environmental contributions	29	12.2
	Not applicable/prefer not to say	32	13.5
<b>Calculate SROI</b>	No	77	32.5
	Not applicable/Prefer not to say	160	67.5
<b>Measurement of SROI</b>	Not applicable	237	100.0
<b>Influence of social objectives on financing option</b>	No	208	87.8
	Yes	7	3.0
	Prefer not to say	22	9.3
<b>Influence of social objectives on negotiations</b>	No	185	78.1
	Yes	38	16.0
	Prefer not to say	14	5.9
<b>Providing updates to investors on social objectives</b>	No	221	93.2
	Yes	16	6.8
<b>Benchmark and performance measure of social objectives</b>	No	206	86.9
	Yes	13	5.5
	Prefer not to say	18	7.6
	Decreased less than 20%	26	11.0
	Did not change	175	73.8

<b>Three-year performance of social objectives and ethical goals</b>	Increased less than 20%	31	13.1
	Increased over 20%	5	2.1
<b>Role of EFMs in achieving social and ethical goals</b>	Strongly disagree	34	14.3
	Somewhat disagree	30	12.7
	Neither agree nor disagree	155	65.4
	Somewhat agree	9	3.8
	Strongly agree	9	3.8

#### 5.4.9 5.4.5 Descriptive Data Analysis – Dependent Variables (Profitability)

Item	Categories	No. (n)	Percentage
<b>ROE</b>	Decreased less than 20%	3	1.3
	Did not change	96	40.5
	Increased less than 20%	105	44.3
	Increased over 20%	33	13.9
<b>ROA</b>	Decreased less than 20%	4	1.7
	Did not change	87	36.7
	Increased less than 20%	114	48.1
	Increased over 20%	32	13.5
<b>Market share</b>	Decreased less than 20%	4	1.7
	Did not change	43	18.1
	Increased less than 20%	135	57.0
	Increased over 20%	55	23.2

#### 5.4.10 5.4.6 Descriptive Statistics

	Mean	Std. Deviation	N
Criteria Check 1	1.62	0.487	237
Criteria Check 2	1.00	0.000	237
Criteria Check 3	1.54	0.499	237
Criteria Check 4	1.64	0.697	237
Criteria Check 5	1.00	0.000	237
Criteria Check 6	1.59	0.502	237
Criteria Check 7	1.54	0.685	237
Criteria Check 8	2.99	1.068	237
Knowledge of EFM 1	2.50	0.674	237
Knowledge of EFM 2	1.62	0.878	237
Knowledge of EFM 3	3.64	0.931	237
Knowledge of EFM 4	5.41	3.626	237
Knowledge of EFM 5	10.81	4.197	237
Knowledge of EFM 6	2.91	0.401	237
Knowledge of EFM 7	11.73	3.876	237
Knowledge of EFM 8	1.69	0.498	237
No. of Employees	2.45	0.697	237
Annual turnover	3.35	1.340	237
Professional Experience 1	2.52	1.107	237
Professional Experience 2	5.84	0.451	237
Professional Experience 3	2.77	1.732	237
Professional Experience 4	3.91	1.207	237
Professional Experience 5	3.95	1.046	237
Academic Qualification 1	3.71	1.035	237
Academic Qualification 2	3.88	1.059	237
Age	2.98	0.823	237
Entrepreneurial Finance Models 1	7.42	3.820	237
Entrepreneurial Finance Models 2	5.68	2.551	237
Entrepreneurial Finance Models 3	2.71	1.106	237
Firm Objectives	2.77	0.559	237
Management Structure 1	1.69	0.665	237
Management Structure 2	1.67	0.855	237
Management Structure 3	3.04	0.850	237
Management Structure 4	2.21	0.769	237
Management Structure 5	2.97	0.991	237
Social Return on Investment 1	2.64	1.230	237
Social Return on Investment 2	3.49	1.367	237
Social Return on Investment 3	2.35	0.939	237
Social Return on Investment 4	4.00	0.000	237

Social Return on Investment 5	1.22	0.597	237
Social Return on Investment 6	1.28	0.566	237
Social Return on Investment 7	1.07	0.251	237
Social Return on Investment 8	1.21	0.563	237
Social Return on Investment 9	3.06	0.568	237
Social Return on Investment 10	2.70	0.897	237
Return on Equity	3.71	0.716	237
Return on Asset	3.73	0.708	237
Market Share	4.02	0.695	237

#### 5.4.11 5.4.7 Revised Variable Coding

		Variable	New Code
Descriptive Data	<b>Criteria and Knowledge Check</b>		
	<b>Dimension 1 - Criteria Check</b>		<b>Recoded Values</b>
	<b>Q2</b>	When was your company established?  Note: This will mean when your company was registered and became a legal entity.	<b>CC 1</b>
	<b>Q3</b>	Where is the headquarters of the company? - Selected Choice	<b>CC 2</b>
	<b>Q4</b>	How many countries does your company operate in either through positioning, delivery of products, or services (Including the country you are headquartered)?	<b>CC 3</b>
	<b>Q5</b>	From the time of establishing the company, when during the life of the business did you begin to operate internationally?	<b>CC 4</b>
	<b>Q6</b>	Did you obtain any external funding within the first 60 months (5 years) of establishing the company?  Note: External funding is the phrase used to describe funds that the company obtains from outside of itself. (E.g., Bank loan, government grants, venture capital funding, etc.	<b>CC 5</b>
	<b>Q7</b>	Approximately, what percentage of your company's total turnover in 2019 is accounted for by your company's international operations?  Note: International operations comprise sales of goods or the provision of services to countries other than the one your company is headquartered in.	<b>CC 6</b>



	<b>Q43</b>	How many times has your company obtained external funding since being established?	<b>CC 7</b>
	<b>Q9</b>	What is the main activity of your company? - Selected Choice	<b>CC 8</b>
	<b>Dimension 2 - Knowledge of EFM</b>		<b>Recoded Values</b>
	<b>Q19</b>	Which of the following external funding options do you know about?  Note: Please choose one or more of the funding sources you know about - Selected Choice	<b>KEFM 1</b>
	<b>Q23</b>	Prior to accessing your first external funding, how did you fund the operations of the company? - Selected Choice	<b>KEFM 2</b>
	<b>Q24</b>	In the future, I expect to plan the company's external funding requirements differently  Note: Reflecting on the external funding you have obtained, would you go for different funding, or go for the same funding initially obtained?	<b>KEFM 3</b>
	<b>Q25</b>	In the future, I would likely approach the following sources for funding - Selected Choice	<b>KEFM 4</b>
	<b>Q26</b>	What new/other external fundings have you obtained since the first external funding obtained? - Selected Choice	<b>KEFM 5</b>
	<b>Q27</b>	What was your role in the company's first round of funding?	<b>KEFM 6</b>
	<b>Q28</b>	Prior to the company accessing its first external funding, which of the following was the company unsuccessful in obtaining? - Selected Choice	<b>KEFM 7</b>

	<b>Q29</b>	Would you exchange a portion of your shares (equity) for the opportunity to access growth finance in the future?  Note: Should you need additional funds for your company, and you approach a fund provider, would you accept an offer to give the fund provider a part of your company in exchange for the money you require.	<b>KEFM 8</b>
<b>Moderating Variable</b>	<b>Firm Size</b>		
	<b>Firm Size</b>		<b>Recoded Values</b>
	<b>Q8</b>	How many people does your company currently employ either full or part-time at all its locations?	<b>FS 1</b>
	<b>Q10</b>	What was the annual turnover of your company in 2019?  Note: Annual turnover refers to your company's total revenue	<b>FS 2</b>
	<b>Management Profile</b>		
	<b>Dimension 1 - Professional Experience</b>		<b>Recoded Values</b>
	<b>Q11</b>	Do you currently hold any of these roles in the company?  Note: Please tick one or more of the options that apply to you. - Selected Choice	<b>PE 1</b>

	<b>Q12</b>	Did you previously hold any of these roles in the company which you do not currently hold?  Note: Please tick one or more of the options that apply to you. - Selected Choice	<b>PE 2</b>
	<b>Q13</b>	What is your area of expertise? - Selected Choice	<b>PE 3</b>
	<b>Q14</b>	How many years of experience do you have in the company's current industry?	<b>PE 4</b>
	<b>Q15</b>	My knowledge of this industry helps me address funding requirements in my company	<b>PE 5</b>
<b>Control</b>	<b>Dimension 2 - Academic Qualification</b>		<b>Recoded Values</b>
	<b>Q16</b>	What is your highest educational qualification? - Selected Choice	<b>AQ 1</b>
	<b>Q17</b>	My academic qualifications have helped me address funding requirements in my company	<b>AQ 2</b>
	<b>Dimension 3 - Age</b>		<b>Recoded Values</b>
	<b>Q18</b>	What is your age?	<b>Age 1</b>
<b>Entrepreneurial Finance Model</b>			
<b>Independent Variable</b>	<b>Entrepreneurial Finance Model</b>		<b>Recoded Values</b>
	<b>Q20</b>	Which of the following external funding options did your company apply to within the first 60 months (5 years) of the company's establishment?  Note: Please choose one or more of the funding sources your company applied for between the first 5 years the company was established. - Selected Choice	<b>EFM 1</b>

	<b>Q21</b>	Which one of the following external funding sources did your company obtain its first funding from?  Note: Select one external fund you obtained first within 5 years the company was established. - Selected Choice	<b>EFM 2</b>
	<b>Q22</b>	What key factors did you consider when planning to obtain external funding?	<b>EFM 3</b>
	<b>Firm Performance</b>		
<b>Dependent Variables</b>	<b>Dimension 1 - Firm Objectives and Management Structure</b>		<b>Recoded Values</b>
	<b>Q30</b>	Within the first three years of the company receiving its first external funding, how did the objectives of the company change?  Note: The objectives will include the company's goals, mission and vision, and core values.	<b>FOMS 1</b>
	<b>Q31</b>	Was the management structure discussed during the negotiations with financiers/investors?  Note: This question is asking if the management staff and structure was discussed during the period the company was trying to obtain external finance	<b>FOMS 2</b>

	<b>Q32</b>	During the period and within the first three years of the company receiving its first external funding, how did the management structure change?  Notes: This question is asking if the management staff was changed or shuffled during and after the period the company was trying to obtain external finance because the investors suggested a change, or did this change just happen and not because of the external funding?	<b>FOMS 3</b>
	<b>Q33</b>	How did the change in management structure impact the performance of the company?  Note: Performance is included to mean profitability, market share, sales turnover, etc.	<b>FOMS 4</b>
	<b>Q34</b>	Did the change in management structure lead to an addition/change of board members during or after the finance was obtained?	<b>FOMS 5</b>
	<b>Q35</b>	If there was no change, how did this affect the performance of the company?	<b>FOMS 6</b>
<b>Dependent Variables</b>	<b>Dimension 2 - Social and Ethical Objectives</b>		<b>Recoded Values</b>
	<b>Q36</b>	Does the company have any social or ethical objectives?  Note: The social objectives of your company would refer to the objectives your company has set towards customers, employees, investors, suppliers, government, the community, and the general public.	<b>SROI 1</b>
	<b>Q37</b>	Describe your company's social or ethical objectives?	<b>SROI 2</b>

	<b>Q38</b>	Does your company calculate the social return on investment (SROI)?  Note: This means if your company calculates what it gains back in every N1 it spends on creating a social value	<b>SROI 3</b>
	<b>Q39</b>	Select the statement that best describes your social return on investment (SROI)	<b>SROI 4</b>
	<b>Q40_1</b>	For each of the following items, please choose 2, 1, or Prefer it to say - Did your company consider the social or ethical objectives of the company when sourcing for funding?	<b>SROI 5</b>
	<b>Q40_2</b>	For each of the following items, please choose 2, 1, or Prefer not to say - Was the social or ethical objective discussed when negotiating for funding?	<b>SROI 6</b>
	<b>Q40_3</b>	For each of the following items, please choose 2, 1, or Prefer not to say - Did investors want feedbacks/updates on the company's progress on its social or ethical objectives?	<b>SROI 7</b>
	<b>Q40_4</b>	For each of the following items, please choose 2, 1, or Prefer not to say - Was there a benchmark discussed with investors to ascertain the successes of achieving the social & ethical goals?	<b>SROI 8</b>
	<b>Q41</b>	Within three years of obtaining the first external finance, how did the company's performance in achieving its social and ethical objectives change?	<b>SROI 9</b>
	<b>Q42</b>	The investors played an active role in the company's drive to achieve social or ethical objectives	<b>SROI 10</b>
<b>Dependent Variables</b>	<b>Dimension 3 - Profitability</b>		<b>Recoded Values</b>
	<b>Q44_5</b>	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on equity (ROE)	<b>Profit 1</b>

	<b>Q44_6</b>	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's return on asset (ROA)	<b>Profit 2</b>
	<b>Q44_8</b>	For the following items, would you say that they decreased, 3, 4 or 5 within three years of obtaining the first external funding? - Company's market share	<b>Profit 3</b>

## Appendix 5.5: Selected Definitions of Entrepreneurial Ecosystem

Author	Definition
Cohen (2006)	Sustainable entrepreneurial ecosystems are defined as an interconnected group of actors in a local geographic community committed to sustainable development through the support and facilitation of new sustainable ventures. (p. 3)
Isenberg (2010)	The entrepreneurship ecosystem consists of a set of individual elements—such as leadership, culture, capital markets, and open-minded customers—that combine in complex ways. (p. 43) Ignoring the interconnected nature of the ecosystem elements can lead to perverse outcomes. (p. 50)
Isenberg (2011)	This entrepreneurship ecosystem consists of a dozen or so elements (which we consolidate into six domains for convenience sake; see the diagram) that, although they are idiosyncratic because they interact in very complex ways, are always present if entrepreneurship is self-sustaining. So although the combinations are always unique, in order for there to be self-sustaining entrepreneurship, you need conducive policy, markets, capital, human skills, culture, and supports. (p. 6)
Feld (2012)	The Boulder thesis states that a prosperous ecosystem has four characteristics: (a) it is led by entrepreneurs; (b) it is inclusive where everyone is welcomed; (c) the involved people are committed long term (at least 20 years) to the ecosystem; and (d) there are many opportunities for gathering, that is, a lot of events. (pp. 25–28)
Isenberg (2014)	By definition an ecosystem is a dynamic, self-regulating network of many different types of actors. In every entrepreneurship hotspot, there are important connectors and influencers who may not be entrepreneurs themselves.
Mason and Brown (2014)	A set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g., firms, venture capitalists, business angels, and banks), institutions (universities, public sector agencies, and financial bodies), and entrepreneurial processes (e.g., the business birth rate, numbers of high growth firms, levels of “blockbuster entrepreneurship,” number of serial entrepreneurs, degree of sell-out mentality within firms, and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment. (p. 9)
Stam (2015)	A set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship (p. 1765) The entrepreneurship ecosystem concept emphasizes that entrepreneurship takes place in a community of interdependent actors. (p. 1761) The systemic conditions are the heart of the ecosystem: networks of entrepreneurs, leadership, finance, talent, knowledge, and support services. The presence of these elements and the interaction between them predominantly determine the success of the ecosystem. (p. 1766)
Audretsch and Belitski (2017)	We define systems of entrepreneurship (further ecosystem) as institutional and organizational as well as other systemic factors that interact and influence identification and commercialization of entrepreneurial opportunities. (p. 2)
Cukier et al. (2016)	We define a start-up ecosystem as a “limited region within 30 miles (or 1-hr travel) range, formed by people, their start-ups, and various types of supporting organizations, interacting as a complex system to create new start-up companies and evolve the existing ones.” (p. 1)
Mack and Mayer (2016)	EE are defined as the interacting components of entrepreneurial systems, which foster new firm creation in a specific regional context. (p. 2120)
Gauthier, Penzel, and Marmer (2017)	We defined ecosystems ... around the concept of a shared pool of resources generally located within a 60-mile (100-km) radius around a center point. (p. 24)
Roundy, Brockman, and Bradshaw (2017)	Communities of agents, social structures, institutions, and cultural values that produce entrepreneurial activity (p. 99)
Spigel (2017a)	Entrepreneurial ecosystems ... are the union of localized cultural outlooks, social networks, investment capital, universities, and active economic policies that create environments supportive of innovation-based ventures. (p. 49) Entrepreneurial ecosystems are combinations of social, political, economic, and cultural elements within a region that support the development and growth of innovative start-ups and encourage nascent entrepreneurs and other actors to take the risks of starting, funding, and otherwise assisting high-risk ventures. (p. 50)
Theodoraki and Messeghem (2017)	The entrepreneurial ecosystem includes three dimensions: actors who form it and their interactions (formal and informal network), physical infrastructure, and culture. (p. 50)



## Appendix 5.6: Breakdown of the 4 Broad Economic Sectors

PRIMARY SECTOR				
Mode of production/ Extractive	Technology/ Craft	Methodology/ Trial and error	Time perspective/ Orientation to the past	Detailed theoretical classification/ Agriculture, Forestry, Fishing, Mining and quarrying
A Agriculture, hunting and forestry			A Agriculture, forestry and fishing	
B Fishing, fish farming			B Mining and quarrying	
C Mining and quarrying				
SECONDARY SECTOR				
Mode of production/ Fabrication	Technology/ Machine technology	Methodology/ Experimentation	Time perspective/ Ad hoc adaptiveness	Detailed theoretical classification/ Manufacturing, Processing of raw materials, Construction
D Manufacturing			C Manufacturing	
E Electricity, gas and water supply			D Electricity, gas, steam and air-conditioning supply	
			E Water supply; sewerage, waste management and remediation activities	
F Construction			F Construction	
TERTIARY SECTOR				
Mode of production/ Processing, recycling	Technology/ Intellectual technology	Methodology/ Simulations, models, decision theory	Time perspective/ Future orientation – forecasting and planning	Detailed theoretical classification/ All services, excluding services related to the creation and sharing of knowledge and information
G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods			G Wholesale and retail trade; repair of motor vehicles and motorcycles	
H Hotels and restaurants			H Transportation and storage	
I Transportation, storage and telecommunications			I Accommodation and food service activities	
K Real estate, renting and business activities, research and development			L Real estate activities	
L Public administration and defence; compulsory social security			O Public administration and defence; compulsory social security	
O Other community, social and personal service activities			R Arts, entertainment and recreation	
P Private households with domestic staff			S Other services	
Q Extra-territorial organisations and bodies			T Activities of households as employers	
			U Activities of extraterritorial organisations and bodies	
QUATERNARY SECTOR				
Mode of production/ Processing, recycling	Technology/ Intellectual technology	Methodology/ Simulations, models, decision theory	Time perspective/ Future orientation – forecasting and planning	Detailed theoretical classification/ Services related to the creation and sharing of knowledge and information
J Financial intermediation			J Information and communication	
M Education			K Financial and insurance activities	
N Health and social work			M Professional, scientific and technical activities	
			N Administrative and support service activities	
			P Education	
			Q Human health and social work activities	

Source: Elaboration based on Bell (1976); European Commission (2008); Turckiva & Martinat (2015); Burger & Slampiakova (2021)

## Appendix 5.7: Model Assessment

This section provides the different assessments of the models being measured in Chapter 5 tables 5.17-5.32.

The model assessment includes the *Case Processing Summary*, *Model Fitting Information*, *Goodness-of-Fit* and *Pseudo R-Square*.

The Pseudo R-Square highlights three values.

### 5.7.1 Model Assessment: Relationship between the EFM obtained and ROE

Case Processing Summary			
		N	Marginal Percentage
Return on Equity	Decreased less than 20%	3	1.3%
	Did not change	96	40.5%
	Increased less than 20%	105	44.3%
	Increased over 20%	33	13.9%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	146.990			
Final	69.373	77.617	10	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	22.144	20	0.333
Deviance	24.752	20	0.211
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.279
Nagelkerke	0.318
McFadden	0.155
Link function: Logit.	

### 5.7.2 Model Assessment: Relationship between the EFM obtained and ROA

Case Processing Summary			
		N	Marginal Percentage
Return on Asset	Decreased less than 20%	4	1.7%
	Did not change	87	36.7%
	Increased less than 20%	114	48.1%
	Increased over 20%	32	13.5%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	145.867			
Final	64.692	81.176	10	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	18.219	20	0.573
Deviance	19.057	20	0.518
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.290
Nagelkerke	0.330
McFadden	0.162
Link function: Logit.	

### 5.7.3 Model Assessment: Relationship between the EFM obtained and Market Share

Case Processing Summary			
		N	Marginal Percentage
Market Share	Decreased less than 20%	4	1.7%
	Did not change	43	18.1%
	Increased less than 20%	135	57.0%
	Increased over 20%	55	23.2%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	152.390			
Final	82.413	69.976	10	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	37.379	20	0.011
Deviance	36.141	20	0.015
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.256
Nagelkerke	0.292
McFadden	0.142
Link function: Logit.	

#### 5.7.4 Model Assessment: Relationship between the EFM obtained and the Mean Profit

Case Processing Summary			
		N	Marginal Percentage
meanProfit55	Decreased less than 20%	3	1.3%
	Did not change	84	35.4%
	Increased less than 20%	120	50.6%
	Increased over 20%	30	12.7%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	141.976			
Final	62.684	79.292	10	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	16.464	20	0.687
Deviance	17.872	20	0.596
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.284
Nagelkerke	0.326
McFadden	0.163
Link function: Logit.	

### 5.7.5 Model Assessment: Relationship between the EFM obtained and Management Structure

Case Processing Summary			
		N	Marginal Percentage
meanMgtStructure	1.50	49	20.7%
	2.00	22	9.3%
	2.50	116	48.9%
	3.00	50	21.1%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	217.683			
Final	110.348	107.335	10	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	62.789	20	0.000
Deviance	60.604	20	0.000
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.364
Nagelkerke	0.399
McFadden	0.185
Link function: Logit.	

### 5.7.6 Model Assessment: Relationship between the EFM obtained and Board Structure

Case Processing Summary			
		N	Marginal Percentage
meanBoard	1.00	50	21.1%
	2.00	87	36.7%
	3.00	100	42.2%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	156.901			
Final	106.176	50.725	10	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	57.374	10	0.000
Deviance	62.046	10	0.000
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.193
Nagelkerke	0.219
McFadden	0.101
Link function: Logit.	

### 5.7.7 Model Assessment: Moderating Effect of Management Experience on the Relationship between the EFM obtained and ROE

Case Processing Summary			
		N	Marginal Percentage
Return on Equity	Decreased less than 20%	3	1.3%
	Did not change	96	40.5%
	Increased less than 20%	105	44.3%
	Increased over 20%	33	13.9%
Professional Experience 4	between 1 - 3 years	4	1.7%
	between 3 - 5 years	43	18.1%
	between 5 - 7 years	31	13.1%
	between 7 - 10 years	52	21.9%
	Over 10 years	107	45.1%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	247.948			
Final	143.546	104.402	14	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	84.819	100	0.861
Deviance	84.163	100	0.872
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.356
Nagelkerke	0.405
McFadden	0.208
Link function: Logit.	



### 5.7.8 Model Assessment: Moderating Effect of Management Experience on the Relationship between the EFM obtained and ROA

Case Processing Summary			
		N	Marginal Percentage
Return on Asset	Decreased less than 20%	4	1.7%
	Did not change	87	36.7%
	Increased less than 20%	114	48.1%
	Increased over 20%	32	13.5%
meanMgtExp	1.00	4	1.7%
	2.00	43	18.1%
	3.00	31	13.1%
	4.00	52	21.9%
	5.00	107	45.1%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	264.032			
Final	166.781	97.251	14	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	124.167	100	0.051
Deviance	110.069	100	0.231
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.337
Nagelkerke	0.383
McFadden	0.194
Link function: Logit.	

### 5.7.9 Model Assessment: Moderating Effect of Management Experience on the Relationship between the EFM obtained and Market Share

Case Processing Summary			
		N	Marginal Percentage
Market Share	Decreased less than 20%	4	1.7%
	Did not change	43	18.1%
	Increased less than 20%	135	57.0%
	Increased over 20%	55	23.2%
meanMgtExp	1.00	4	1.7%
	2.00	43	18.1%
	3.00	31	13.1%
	4.00	52	21.9%
	5.00	107	45.1%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	280.914			
Final	191.732	89.182	14	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	156.663	100	0.000
Deviance	135.821	100	0.010
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.314
Nagelkerke	0.359
McFadden	0.181
Link function: Logit.	

### 5.7.10 Model Assessment: Moderating Effect of Management Experience on the Relationship between the EFM obtained and Management Structure

Case Processing Summary			
		N	Marginal Percentage
meanMgtStructure	1.50	49	20.7%
	2.00	22	9.3%
	2.50	116	48.9%
	3.00	50	21.1%
meanMgtExp	1.00	4	1.7%
	2.00	43	18.1%
	3.00	31	13.1%
	4.00	52	21.9%
	5.00	107	45.1%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	347.542			
Final	225.464	122.078	14	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	203.049	100	0.000
Deviance	159.208	100	0.000
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.403
Nagelkerke	0.441
McFadden	0.210
Link function: Logit.	

### 5.7.11 Model Assessment: Moderating Effect of Management Experience on the Relationship between the EFM obtained and Board Structure

Case Processing Summary			
		N	Marginal Percentage
meanBoard	1.00	50	21.1%
	2.00	87	36.7%
	3.00	100	42.2%
meanMgtExp	1.00	4	1.7%
	2.00	43	18.1%
	3.00	31	13.1%
	4.00	52	21.9%
	5.00	107	45.1%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	277.060			
Final	206.635	70.425	14	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	139.882	62	0.000
Deviance	146.078	62	0.000
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.257
Nagelkerke	0.292
McFadden	0.140
Link function: Logit.	

### 5.7.12 Model Assessment: Moderating Effect of Firm Size (Employee size and Annual Turnover) on the Relationship between the EFM obtained and ROE

Case Processing Summary			
		N	Marginal Percentage
Return on Equity	Decreased less than 20%	3	1.3%
	Did not change	96	40.5%
	Increased less than 20%	105	44.3%
	Increased over 20%	33	13.9%
meanFS1	1.00	18	7.6%
	2.00	104	43.9%
	3.00	105	44.3%
	4.00	10	4.2%
meanFS2	1.00	29	12.2%
	2.00	27	11.4%
	3.00	85	35.9%
	4.00	25	10.5%
	5.00	71	30.0%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	365.270			
Final	246.104	119.167	17	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	478.978	175	0.000
Deviance	201.697	175	0.081
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.395
Nagelkerke	0.449
McFadden	0.238
Link function: Logit.	

### 5.7.13 Model Assessment: Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Board Structure

Case Processing Summary			
		N	Marginal Percentage
meanBoard	1.00	50	21.1%
	2.00	87	36.7%
	3.00	100	42.2%
meanFS1	1.00	18	7.6%
	2.00	104	43.9%
	3.00	105	44.3%
	4.00	10	4.2%
meanFS2	1.00	29	12.2%
	2.00	27	11.4%
	3.00	85	35.9%
	4.00	25	10.5%
	5.00	71	30.0%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	343.981			
Final	244.442	99.539	17	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	230.039	111	0.000
Deviance	190.829	111	0.000
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.343
Nagelkerke	0.390
McFadden	0.198
Link function: Logit.	

### 5.7.14 Model Assessment: Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Management Structure

Case Processing Summary			
		N	Marginal Percentage
meanMgtStructure	1.50	49	20.7%
	2.00	22	9.3%
	2.50	116	48.9%
	3.00	50	21.1%
meanFS1	1.00	18	7.6%
	2.00	104	43.9%
	3.00	105	44.3%
	4.00	10	4.2%
meanFS2	1.00	29	12.2%
	2.00	27	11.4%
	3.00	85	35.9%
	4.00	25	10.5%
	5.00	71	30.0%
Valid		237	100.0%
Missing		0	
Total		237	

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	457.559			
Final	307.795	149.765	17	0.000
Link function: Logit.				

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	1241.074	175	0.000
Deviance	267.961	175	0.000
Link function: Logit.			

Pseudo R-Square	
Cox and Snell	0.468
Nagelkerke	0.513
McFadden	0.258
Link function: Logit.	





## Appendix 5.8: Test of Parallel Lines

The Tables below show the test of parallel lines for each regression analysis that measures the impact of the independent variable on the dependent variable. The test highlights the proportional odds assumption, which points to the validity of the model (Kleinbaum & Ananth, 1997).

The models in this OLR will be accepted as the Chi-Square is significant with  $>0.05$  (Ari & Yildiz, 2016).

The tables are linked to the tables in section 5.13 in this research.

**Table 5.17b: Test of Parallel Lines<sup>a</sup> (Relationship between the EFM obtained and ROE)**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	69.373			
General	37.454	31.919	20	0.044

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

**Table 5.18b: Test of Parallel Lines<sup>a</sup> (Relationship between the EFM obtained and ROA)**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	64.692			
General	38.467	26.224	20	0.159

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

**Table 5.19b: Test of Parallel Lines<sup>a</sup> (Relationship between the EFM obtained and Market Share)**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	82.413			
General	19.443 <sup>b</sup>	62.971 <sup>c</sup>	20	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.20b: Test of Parallel Lines<sup>a</sup> (Relationship between the EFM obtained and the Mean Profit)**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	62.684			
General	37.927	24.756	20	0.211

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

**Table 5.21b: Test of Parallel Lines<sup>a</sup> (Relationship between the EFM obtained and Management Structure)**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	110.348			
General	.000 <sup>b</sup>	110.348	20	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value is practically zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.

**Table 5.22b: Test of Parallel Lines<sup>a</sup> (Relationship between the EFM obtained and Board Structure)**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	106.176			
General	44.561 <sup>b</sup>	61.615 <sup>c</sup>	10	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.23b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Management Experience on the Relationship between the EFM obtained and ROE)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	143.546			
General	57.052	86.494	28	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

**Table 5.24b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Management Experience on the Relationship between the EFM obtained and ROA)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	166.781			
General	123.069 <sup>b</sup>	43.712 <sup>c</sup>	28	0.030

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.25b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Management Experience on the Relationship between the EFM obtained and Market Share)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	191.732			
General	111.639 <sup>b</sup>	80.093 <sup>c</sup>	28	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.26b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Management Experience on the Relationship between the EFM obtained and Management Structure)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	225.464			
General	160.285 <sup>b</sup>	65.179 <sup>c</sup>	28	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.27b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Management Experience on the Relationship between the EFM obtained and Board Structure)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	206.635			
General	129.253 <sup>b</sup>	77.382 <sup>c</sup>	14	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.28a: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Firm Size (Employee size and Annual Turnover) on the Relationship between the EFM obtained and ROE)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	246.104			
General	147.578 <sup>b</sup>	98.526 <sup>c</sup>	34	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.30b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Market Share)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	250.492			
General	154.726 <sup>b</sup>	95.766 <sup>c</sup>	34	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.31b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Board Structure)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	244.442			
General	162.296 <sup>b</sup>	82.146 <sup>c</sup>	17	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**Table 5.32b: Test of Parallel Lines<sup>a</sup> (Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Management Structure)**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	307.795			
General	179.293 <sup>b</sup>	128.502 <sup>c</sup>	34	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

- b. The log-likelihood value cannot be further increased after maximum number of step-halving.
- c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

## Appendix 5.9: Recode Dummy Variable Instructions on AMOS

```
RECODE EFM3 (2=1) (ELSE=0) INTO Independentventurecapital.
VARIABLE LABELS Independentventurecapital 'Independent venture capital'.
EXECUTE.
RECODE EFM3 (4=1) (ELSE=0) INTO Philanthropicventurecapital.
VARIABLE LABELS Philanthropicventurecapital 'Philanthropic venture
capital'.
EXECUTE.
RECODE EFM3 (5=1) (ELSE=0) INTO Corporateventurecapital.
VARIABLE LABELS Corporateventurecapital 'Corporate venture capital'.
EXECUTE.
RECODE EFM3 (6=1) (ELSE=0) INTO Bank.
VARIABLE LABELS Bank 'Bank'.
EXECUTE.
RECODE EFM3 (7=1) (ELSE=0) INTO Governmentgrant.
VARIABLE LABELS Governmentgrant 'Government grant'.
EXECUTE.
RECODE EFM3 (9=1) (ELSE=0) INTO Businessangels.
VARIABLE LABELS Businessangels 'Business angels'.
EXECUTE.
RECODE EFM3 (10=1) (ELSE=0) INTO Accelerators.
VARIABLE LABELS Accelerators 'Accelerators'.
EXECUTE.
RECODE EFM3 (13=1) (ELSE=0) INTO Other.
VARIABLE LABELS Other 'Other'.
EXECUTE.
DATASET ACTIVATE DataSet1.

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Prf2
  /METHOD=ENTER Independentventurecapital Philanthropicventurecapital
Corporateventurecapital Bank
Governmentgrant Businessangels.
```

## Appendix 5.10: Ordinal Logistics Regression Results

### 5.10.1 Relationship between the EFM obtained and ROE

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Crowdfunding → ROE	0.801	1.088	0.541	0.462	-1.333	2.934
IVC → ROE	3.238	0.977	10.991	0.001	1.324	5.152
GVC → ROE	0.369	1.329	0.077	0.781	-2.235	2.974
PhVC → ROE	5.274	1.192	19.576	0.000	2.937	7.610
CVC → ROE	2.896	0.899	10.376	0.001	1.134	4.658
Bank → ROE	0.850	0.906	0.879	0.348	-0.927	2.627
GG → ROE	2.048	0.979	4.375	0.036	0.129	3.966
BA → ROE	0.147	1.078	0.019	0.892	-1.966	2.260
Accelerators → ROE	2.490	1.049	5.632	0.018	0.434	4.547
PF → ROE	2.048	1.411	2.105	0.147	-0.719	4.814

**Table 5.17a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	69.373			
General	37.454	31.919	20	0.044

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.



### 5.10.2 Relationship between the EFM obtained and ROA

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Crowdfunding → ROA	1.443	1.025	1.982	0.159	-0.566	3.452
IVC → ROA	3.470	0.948	13.412	0.000	1.613	5.327
GVC → ROA	1.098	1.208	0.827	0.363	-1.268	3.465
PhVC → ROA	5.454	1.164	21.951	0.000	3.172	7.735
CVC → ROA	3.119	0.862	13.091	0.000	1.430	4.809
Bank → ROA	1.196	0.860	1.932	0.165	-0.490	2.881
GG → ROA	1.254	0.940	1.778	0.182	-0.589	3.097
BA → ROA	0.128	1.022	0.016	0.900	-1.875	2.131
Accelerators → ROA	2.183	1.015	4.630	0.031	0.195	4.172
PF → ROA	-0.564	1.595	0.125	0.724	-3.691	2.563

**Table 5.18a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	64.692			
General	38.467	26.224	20	0.159

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

### 5.10.3 Relationship between the EFM obtained and Market Share

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Crowdfunding → Market Share	-2.365	0.981	5.810	0.016	-4.289	-0.442
IVC → Market Share	2.437	0.886	7.566	0.006	0.701	4.174
GVC → Market Share	-2.552	1.172	4.745	0.029	-4.848	-0.256
PhVC → Market Share	1.124	1.023	1.206	0.272	-0.882	3.129
CVC → Market Share	0.931	0.776	1.439	0.230	-0.590	2.452
Bank → Market Share	-0.925	0.792	1.362	0.243	-2.477	0.628
GG → Market Share	-0.564	0.885	0.406	0.524	-2.299	1.171
BA → Market Share	-0.241	0.939	0.066	0.797	-2.082	1.600
Accelerators → Market Share	-0.585	0.965	0.368	0.544	-2.477	1.306
PF → Market Share	1.546E-16	1.417	0.000	1.000	-2.777	2.777

**Table 5.19a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	82.413			
General	19.443 <sup>b</sup>	62.971 <sup>c</sup>	20	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

#### 5.10.4 Relationship between the EFM obtained and the Mean Profit

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Crowdfunding → meanProfit	0.774	1.068	0.525	0.469	-1.319	2.868
IVC → meanProfit	3.462	0.972	12.689	0.000	1.557	5.367
GVC → meanProfit	0.351	1.301	0.073	0.787	-2.199	2.902
PhVC → meanProfit	5.059	1.134	19.894	0.000	2.836	7.282
CVC → meanProfit	3.310	0.888	13.881	0.000	1.569	5.051
Bank → meanProfit	1.326	0.884	2.249	0.134	-0.407	3.059
GG → meanProfit	1.698	0.962	3.115	0.078	-0.188	3.583
BA → meanProfit	0.139	1.051	0.017	0.895	-1.922	2.199
Accelerators → meanProfit	2.571	1.046	6.045	0.014	0.521	4.621
PF → meanProfit	2.070	1.416	2.137	0.144	-0.706	4.846

**Table 5.20a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	62.684			
General	37.927	24.756	20	0.211

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

### 5.10.5 Relationship between the EFM obtained and Management Structure

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Crowdfunding → Management Structure	-3.038	1.007	9.099	0.003	-5.011	-1.064
IVC → Management Structure	1.300	0.861	2.280	0.131	-0.387	2.987
GVC → Management Structure	-2.000	1.123	3.169	0.075	-4.201	0.202
Ph → Management Structure	-0.448	1.034	0.187	0.665	-2.474	1.579
CVC → Management Structure	1.312	0.777	2.856	0.091	-0.210	2.834
Bank → Management Structure	-1.623	0.791	4.207	0.040	-3.173	-0.072
GG → Management Structure	-1.412	0.871	2.630	0.105	-3.119	0.295
Businessangels Accelerators → Management Structure	-0.867	0.923	0.882	0.348	-2.676	0.942
	-2.008	0.939	4.569	0.033	-3.849	-0.167
PF → Management Structure	-22.020	0.000			-22.020	-22.020

**Table 5.21a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	110.348			
General	.000 <sup>b</sup>	110.348	20	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value is practically zero. There may be a complete separation in the data. The maximum likelihood estimates do not exist.

### 5.10.6 Relationship between the EFM obtained and Board Structure

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Crowdfunding → Board Structure	-4.011	1.091	13.512	0.000	-6.149	-1.872
IVC → Board Structure	-1.316	0.923	2.035	0.154	-3.124	0.492
GVC → Board Structure	-3.622	1.238	8.555	0.003	-6.049	-1.195
Ph → Board Structure	-0.168	1.141	0.022	0.883	-2.405	2.068
CVC → Board Structure	-1.396	0.850	2.695	0.101	-3.062	0.271
Bank → Board Structure	-1.246	0.864	2.082	0.149	-2.939	0.447
GG → Board Structure	-2.422	0.940	6.643	0.010	-4.264	-0.580
BA → Board Structure	-0.231	1.025	0.051	0.822	-2.241	1.779
Accelerators → Board Structure	-2.482	1.003	6.116	0.013	-4.448	-0.515
PF → Board Structure	-22.826	0.000			-22.826	-22.826

**Table 5.22a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	106.176			
General	44.561 <sup>b</sup>	61.615 <sup>c</sup>	10	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

### 5.10.7 Moderating Effect of Management Experience on the Relationship between the EFM obtained and ROE

						95% Confidence Interval	
	Location	Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
Threshold	[Profit1 = 2]	-3.311	1.002	10.928	0.001	-5.274	-1.348
	[Profit1 = 3]	1.476	0.888	2.764	0.096	-0.264	3.215
	[Profit1 = 4]	4.458	0.925	23.245	0.000	2.646	6.270
Location	Crowdfunding	1.467	1.126	1.698	0.193	-0.740	3.674
	IVC	3.989	1.012	15.545	0.000	2.006	5.973
	GVC	0.832	1.368	0.369	0.543	-1.850	3.513
	PhVC	5.440	1.208	20.270	0.000	3.072	7.808
	CVC	3.469	0.930	13.926	0.000	1.647	5.291
	Bank	1.881	0.942	3.986	0.046	0.034	3.728
	GG	2.679	1.015	6.965	0.008	0.689	4.668
	BA	1.455	1.134	1.647	0.199	-0.767	3.678
	Accelerators	2.885	1.081	7.130	0.008	0.767	5.003
	PF	2.908	1.475	3.886	0.049	0.017	5.798
	Other	0 <sup>a</sup>					
	[meanMgtExp=1.00]	-1.058	1.146	0.853	0.356	-3.303	1.187
	[meanMgtExp=2.00]	-1.967	0.424	21.497	0.000	-2.799	-1.136
	[meanMgtExp=3.00]	-0.614	0.436	1.980	0.159	-1.469	0.241
	[meanMgtExp=4.00]	-1.424	0.392	13.205	0.000	-2.193	-0.656
[meanMgtExp=5.00]	0 <sup>a</sup>						

**Table 5.23a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi- Square	df	Sig.
Null Hypothesis	143.546			
General	57.052	86.494	28	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

### 5.10.8 Moderating Effect of Management Experience on the Relationship between the EFM obtained and ROA

						95% Confidence Interval	
	Location	Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
Threshold	[Profit2 = 2]	-2.787	0.915	9.274	0.002	-4.581	-0.993
	[Profit2 = 3]	1.414	0.840	2.834	0.092	-0.232	3.061
	[Profit2 = 4]	4.618	0.882	27.394	0.000	2.889	6.348
Location	Crowdfunding	2.171	1.061	4.189	0.041	0.092	4.250
	IVC	4.139	0.978	17.922	0.000	2.223	6.055
	GVC	1.846	1.252	2.174	0.140	-0.608	4.299
	PhVC	5.585	1.176	22.571	0.000	3.281	7.889
	CVC	3.659	0.888	16.986	0.000	1.919	5.399
	Bank	2.091	0.895	5.462	0.019	0.337	3.845
	GG	1.813	0.968	3.509	0.061	-0.084	3.709
	BA	1.200	1.070	1.259	0.262	-0.897	3.297
	Accelerators	2.549	1.039	6.015	0.014	0.512	4.586
	PF	0.028	1.589	0.000	0.986	-3.086	3.142
	Other	0 <sup>a</sup>					
	[meanMgtExp=1.00]	-0.259	1.078	0.058	0.810	-2.371	1.854
	[meanMgtExp=2.00]	-1.217	0.405	9.027	0.003	-2.010	-0.423
	[meanMgtExp=3.00]	-0.941	0.442	4.537	0.033	-1.807	-0.075
	[meanMgtExp=4.00]	-1.327	0.390	11.590	0.001	-2.091	-0.563
[meanMgtExp=5.00]	0 <sup>a</sup>						

**Table 5.24a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi- Square	df	Sig.
Null Hypothesis	166.781			
General	123.069 <sup>b</sup>	43.712 <sup>c</sup>	28	0.030

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

### 5.10.9 Moderating Effect of Management Experience on the Relationship between the EFM obtained and Market Share

						95% Confidence Interval	
	Location	Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
Threshold	[Profit3 = 2]	-5.036	0.947	28.311	0.000	-6.891	-3.181
	[Profit3 = 3]	-1.946	0.785	6.150	0.013	-3.485	-0.408
	[Profit3 = 4]	1.545	0.778	3.941	0.047	0.020	3.070
Location	Crowdfunding	-1.703	1.011	2.836	0.092	-3.686	0.279
	IVC	3.192	0.941	11.516	0.001	1.349	5.036
	GVC	-1.699	1.209	1.974	0.160	-4.070	0.671
	PhVC	1.091	1.048	1.083	0.298	-0.964	3.145
	CVC	1.252	0.803	2.430	0.119	-0.322	2.825
	Bank	-0.092	0.829	0.012	0.911	-1.717	1.532
	GG	-0.011	0.912	0.000	0.990	-1.799	1.777
	BA	0.857	1.001	0.734	0.392	-1.104	2.818
	Accelerators	-0.300	0.990	0.092	0.762	-2.240	1.640
	PF	0.650	1.439	0.204	0.652	-2.170	3.470
	Other	0 <sup>a</sup>					
	[meanMgtExp=1.00]	-0.131	1.134	0.013	0.908	-2.353	2.091
	[meanMgtExp=2.00]	-1.143	0.412	7.683	0.006	-1.952	-0.335
	[meanMgtExp=3.00]	-1.421	0.454	9.783	0.002	-2.312	-0.531
	[meanMgtExp=4.00]	-1.523	0.404	14.220	0.000	-2.315	-0.732
	[meanMgtExp=5.00]	0 <sup>a</sup>					

**Table 5.25a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi- Square	df	Sig.
Null Hypothesis	191.732			
General	111.639 <sup>b</sup>	80.093 <sup>c</sup>	28	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.



### 5.10.10 Moderating Effect of Management Experience on the Relationship between the EFM obtained and Management Structure

						95% Confidence Interval	
		Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
Location							
Threshold	[meanMgtStructure = 1.50]	-2.768	0.781	12.560	0.000	-4.298	-1.237
	[meanMgtStructure = 2.00]	-2.064	0.769	7.205	0.007	-3.570	-0.557
	[meanMgtStructure = 2.50]	1.326	0.759	3.053	0.081	-0.161	2.813
Location	Crowdfunding	-3.079	1.037	8.818	0.003	-5.111	-1.047
	IVC	1.292	0.873	2.190	0.139	-0.419	3.004
	GVC	-1.505	1.166	1.665	0.197	-3.791	0.781
	PhVC	-0.768	1.049	0.536	0.464	-2.824	1.288
	CVC	1.214	0.783	2.405	0.121	-0.320	2.748
	Bank	-1.574	0.812	3.760	0.053	-3.164	0.017
	GG	-1.415	0.887	2.541	0.111	-3.154	0.325
	BA	-0.972	0.965	1.015	0.314	-2.863	0.919
	Accelerators	-2.314	0.955	5.865	0.015	-4.186	-0.441
	PF	-22.090	0.000			-	-
	Other	0 <sup>a</sup>				22.090	22.090
	[meanMgtExp=1.00]	-1.319	1.024	1.661	0.198	-3.326	0.687
	[meanMgtExp=2.00]	-0.060	0.382	0.024	0.876	-0.809	0.690
	[meanMgtExp=3.00]	-1.571	0.456	11.885	0.001	-2.465	-0.678
	[meanMgtExp=4.00]	-0.530	0.365	2.104	0.147	-1.246	0.186
	[meanMgtExp=5.00]	0 <sup>a</sup>					

**Table 5.26a: Test of Parallel Lines<sup>a</sup>**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	225.464			
General	160.285 <sup>b</sup>	65.179 <sup>c</sup>	28	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

### 5.10.11 Moderating Effect of Management Experience on the Relationship between the EFM obtained and Board Structure

						95% Confidence Interval	
		Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
	Location						
Threshold	[meanBoard = 1.00]	-3.758	0.931	16.285	0.000	-5.584	-1.933
	[meanBoard = 2.00]	-1.696	0.905	3.515	0.061	-3.469	0.077
Location	Crowdfunding	-4.645	1.179	15.534	0.000	-6.955	-2.335
	IVC	-1.781	0.996	3.198	0.074	-3.732	0.171
	GVC	-3.709	1.331	7.770	0.005	-6.317	-1.101
	PhVC	-0.735	1.198	0.377	0.539	-3.084	1.613
	CVC	-1.935	0.925	4.372	0.037	-3.749	-0.121
	Bank	-1.770	0.939	3.549	0.060	-3.611	0.072
	GG	-3.009	1.016	8.775	0.003	-4.999	-1.018
	BA	-1.137	1.109	1.050	0.306	-3.311	1.038
	Accelerators	-3.086	1.074	8.252	0.004	-5.192	-0.981
	PF	-23.493	0.000			-	-
	Other	0 <sup>a</sup>				23.493	23.493
	[meanMgtExp=1.00]	-2.025	1.031	3.860	0.049	-4.046	-0.005
	[meanMgtExp=2.00]	0.663	0.390	2.881	0.090	-0.102	1.428
	[meanMgtExp=3.00]	-1.250	0.432	8.388	0.004	-2.096	-0.404
	[meanMgtExp=4.00]	0.127	0.361	0.125	0.724	-0.579	0.834
	[meanMgtExp=5.00]	0 <sup>a</sup>					

**Table 5.27a: Test of Parallel Lines<sup>a</sup>**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	206.635			
General	129.253 <sup>b</sup>	77.382 <sup>c</sup>	14	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**5.10.12 Moderating Effect of Firm Size (Employee size and Annual Turnover) on the Relationship between the EFM obtained and ROE**

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
[Profit1 = 2]	-3.224	1.277	6.374	0.012	-5.727	-0.721
[Profit1 = 3]	1.954	1.185	2.720	0.099	-0.368	4.276
[Profit1 = 4]	5.046	1.223	17.021	0.000	2.649	7.443
Crowdfunding	2.369	1.192	3.947	0.047	0.032	4.706
IVC	4.666	1.086	18.448	0.000	2.537	6.795
GVC	1.958	1.468	1.779	0.182	-0.919	4.834
PhVC	6.644	1.288	26.594	0.000	4.119	9.170
CVC	4.349	0.985	19.483	0.000	2.418	6.279
Bank	1.960	0.979	4.007	0.045	0.041	3.880
GG	3.885	1.128	11.864	0.001	1.674	6.096
BA	1.941	1.207	2.584	0.108	-0.426	4.307
Accelerators	2.821	1.116	6.392	0.011	0.634	5.009
PF	3.699	1.557	5.646	0.017	0.648	6.750
Other	0 <sup>a</sup>					
[meanFS1=1.00]	-1.169	0.899	1.690	0.194	-2.930	0.593
[meanFS1=2.00]	-0.717	0.746	0.926	0.336	-2.179	0.744
[meanFS1=3.00]	0.452	0.762	0.351	0.553	-1.042	1.946
[meanFS1=4.00]	0 <sup>a</sup>					
[meanFS2=1.00]	-2.104	0.614	11.761	0.001	-3.307	-0.902
[meanFS2=2.00]	-0.262	0.545	0.231	0.631	-1.330	0.806
[meanFS2=3.00]	-1.197	0.384	9.687	0.002	-1.950	-0.443
[meanFS2=4.00]	-0.328	0.525	0.391	0.532	-1.357	0.701
[meanFS2=5.00]	0 <sup>a</sup>					

**Table 5.28a: Test of Parallel Lines<sup>a</sup>**

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	246.104			
General	147.578 <sup>b</sup>	98.526 <sup>c</sup>	34	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**5.10.13 Moderating Effect of Firm Size (Employee Size and Annual Turnover)  
on the Relationship between the EFM obtained and ROA**

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
[Profit2 = 2]	-2.681	1.158	5.359	0.021	-4.951	-0.411
[Profit2 = 3]	1.577	1.094	2.079	0.149	-0.567	3.722
[Profit2 = 4]	4.790	1.135	17.819	0.000	2.566	7.015
Crowdfunding	2.146	1.086	3.906	0.048	0.018	4.274
IVC	4.433	1.018	18.970	0.000	2.438	6.428
GVC	1.702	1.306	1.697	0.193	-0.858	4.262
PhVC	6.350	1.225	26.866	0.000	3.949	8.751
CVC	4.114	0.908	20.541	0.000	2.335	5.894
Bank	1.763	0.900	3.836	0.050	-0.001	3.528
GG	1.717	1.021	2.827	0.093	-0.284	3.719
BA	1.520	1.099	1.911	0.167	-0.635	3.674
Accelerators	2.149	1.033	4.327	0.038	0.124	4.173
PF	-0.174	1.589	0.012	0.913	-3.289	2.941
Other	0 <sup>a</sup>					
[meanFS1=1.00]	0.338	0.812	0.173	0.677	-1.253	1.929
[meanFS1=2.00]	-0.610	0.705	0.747	0.387	-1.992	0.773
[meanFS1=3.00]	0.222	0.723	0.095	0.758	-1.194	1.639
[meanFS1=4.00]	0 <sup>a</sup>					
[meanFS2=1.00]	-0.745	0.534	1.947	0.163	-1.792	0.301
[meanFS2=2.00]	-0.010	0.524	0.000	0.984	-1.036	1.016
[meanFS2=3.00]	-0.973	0.379	6.580	0.010	-1.717	-0.230
[meanFS2=4.00]	-0.305	0.525	0.338	0.561	-1.333	0.723
[meanFS2=5.00]	0 <sup>a</sup>					

**5.10.14 Moderating Effect of Firm Size (Employee Size and Annual Turnover)  
on the Relationship between the EFM obtained and Market Share**

Location	Estimate	Std. Error	Wald	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
[Profit3 = 2]	-3.952	1.168	11.457	0.001	-6.240	-1.664
[Profit3 = 3]	-0.847	1.058	0.641	0.423	-2.920	1.226
[Profit3 = 4]	2.648	1.074	6.081	0.014	0.543	4.752
Crowdfunding	-1.504	1.034	2.117	0.146	-3.530	0.522
IVC	2.860	0.960	8.866	0.003	0.977	4.742
GVC	-1.682	1.252	1.805	0.179	-4.136	0.772
PhVC	1.311	1.075	1.487	0.223	-0.796	3.419
CVC	1.386	0.820	2.856	0.091	-0.221	2.993
Bank	-0.033	0.845	0.001	0.969	-1.688	1.623
GG	0.840	0.980	0.736	0.391	-1.080	2.760
BA	0.386	1.029	0.141	0.708	-1.631	2.404
Accelerators	-0.311	0.999	0.097	0.756	-2.270	1.648
PF	1.004	1.443	0.484	0.487	-1.825	3.832
Other	0 <sup>a</sup>					
[meanFS1=1.00]	0.134	0.827	0.026	0.872	-1.487	1.754
[meanFS1=2.00]	0.203	0.717	0.080	0.778	-1.203	1.609
[meanFS1=3.00]	0.999	0.744	1.805	0.179	-0.459	2.457
[meanFS1=4.00]	0 <sup>a</sup>					
[meanFS2=1.00]	-1.478	0.537	7.562	0.006	-2.531	-0.424
[meanFS2=2.00]	-0.518	0.536	0.932	0.334	-1.569	0.533
[meanFS2=3.00]	0.018	0.374	0.002	0.961	-0.714	0.751
[meanFS2=4.00]	-0.147	0.538	0.075	0.784	-1.201	0.907
[meanFS2=5.00]	0 <sup>a</sup>					

**Table 5.30a: Test of Parallel Lines<sup>a</sup>**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	250.492			
General	154.726 <sup>b</sup>	95.766 <sup>c</sup>	34	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.



### 5.10.15 Moderating Effect of Firm Size (Employee Size and Annual Turnover) on the Relationship between the EFM obtained and Board Structure

						95% Confidence Interval	
	Location	Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
Threshold	[meanBoard = 1.00]	-1.470	1.169	1.582	0.209	-3.761	0.821
	[meanBoard = 2.00]	0.813	1.167	0.486	0.486	-1.474	3.100
Location	Crowdfunding	-4.052	1.161	12.190	0.000	-6.327	-1.777
	IVC	-1.804	0.984	3.364	0.067	-3.732	0.124
	GVC	-3.772	1.446	6.805	0.009	-6.605	-0.938
	PhVC	-0.881	1.198	0.541	0.462	-3.229	1.467
	CVC	-1.808	0.879	4.234	0.040	-3.531	-0.086
	Bank	-0.785	0.905	0.752	0.386	-2.560	0.990
	GG	-1.319	1.022	1.665	0.197	-3.322	0.684
	BA	-1.128	1.108	1.037	0.309	-3.299	1.043
	Accelerators	-2.197	1.031	4.536	0.033	-4.218	-0.175
	PF	-22.663	0.000			-22.663	-22.663
	Other	0 <sup>a</sup>					
	[meanFS1=1.00]	1.428	0.934	2.335	0.126	-0.403	3.259
	[meanFS1=2.00]	1.831	0.818	5.007	0.025	0.227	3.435
	[meanFS1=3.00]	1.824	0.830	4.829	0.028	0.197	3.451
	[meanFS1=4.00]	0 <sup>a</sup>					
	[meanFS2=1.00]	-0.237	0.523	0.205	0.651	-1.262	0.789
	[meanFS2=2.00]	-1.903	0.548	12.072	0.001	-2.976	-0.829
	[meanFS2=3.00]	1.325	0.377	12.350	0.000	0.586	2.064
	[meanFS2=4.00]	-0.460	0.520	0.780	0.377	-1.480	0.560
	[meanFS2=5.00]	0 <sup>a</sup>					

**Table 5.31a: Test of Parallel Lines<sup>a</sup>**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	244.442			
General	162.296 <sup>b</sup>	82.146 <sup>c</sup>	17	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

**5.10.16 Moderating Effect of Firm Size (Employee Size and Annual Turnover)  
on the Relationship between the EFM obtained and Management Structure**

						95% Confidence Interval	
	Location	Estimate	Std. Error	Wald	Sig.	Lower Bound	Upper Bound
Threshold	[meanMgtStructure = 1.50]	-1.770	1.149	2.374	0.123	-4.021	0.481
	[meanMgtStructure = 2.00]	-1.000	1.147	0.760	0.383	-3.247	1.247
	[meanMgtStructure = 2.50]	2.623	1.139	5.298	0.021	0.389	4.856
Location	Crowdfunding	-2.520	1.109	5.159	0.023	-4.694	-0.345
	IVC	2.939	0.943	9.719	0.002	1.091	4.787
	GVC	-0.494	1.260	0.154	0.695	-2.963	1.976
	PhVC	0.892	1.083	0.678	0.410	-1.231	3.015
	CVC	1.868	0.817	5.226	0.022	0.266	3.469
	Bank	-0.661	0.839	0.621	0.431	-2.306	0.984
	GG	0.311	0.968	0.103	0.748	-1.585	2.208
	BA	-0.178	1.013	0.031	0.860	-2.163	1.807
	Accelerators	-2.054	0.990	4.306	0.038	-3.994	-0.114
	PF	-21.704	0.000			-21.704	-21.704
	Other	0 <sup>a</sup>					
	[meanFS1=1.00]	1.130	0.939	1.449	0.229	-0.710	2.971
	[meanFS1=2.00]	2.009	0.836	5.772	0.016	0.370	3.649
	[meanFS1=3.00]	0.894	0.850	1.106	0.293	-0.772	2.561
	[meanFS1=4.00]	0 <sup>a</sup>					
	[meanFS2=1.00]	-2.113	0.574	13.559	0.000	-3.238	-0.988
	[meanFS2=2.00]	-2.902	0.584	24.672	0.000	-4.047	-1.757
	[meanFS2=3.00]	-1.716	0.394	18.989	0.000	-2.487	-0.944
	[meanFS2=4.00]	-2.362	0.569	17.236	0.000	-3.478	-1.247
	[meanFS2=5.00]	0 <sup>a</sup>					

**Table 5.32a: Test of Parallel Lines<sup>a</sup>**

<b>Model</b>	<b>-2 Log Likelihood</b>	<b>Chi-Square</b>	<b>df</b>	<b>Sig.</b>
Null Hypothesis	307.795			
General	179.293 <sup>b</sup>	128.502 <sup>c</sup>	34	0.000

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

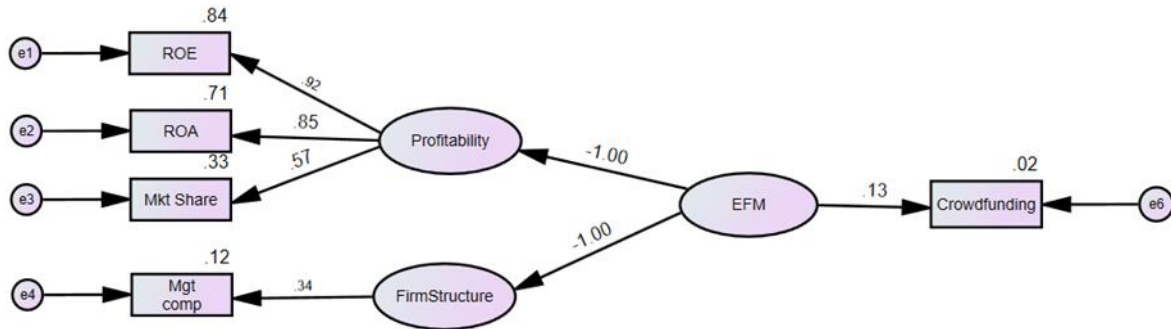
a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

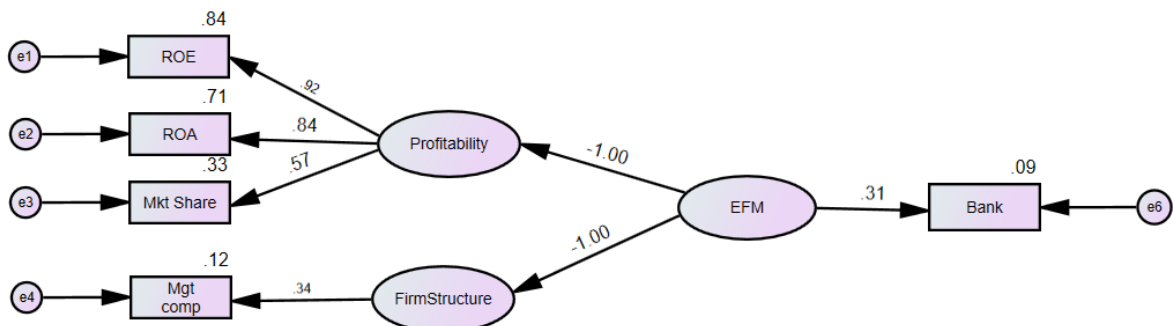
c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

## Appendix 5.11: Confirmatory Factor Analysis Results

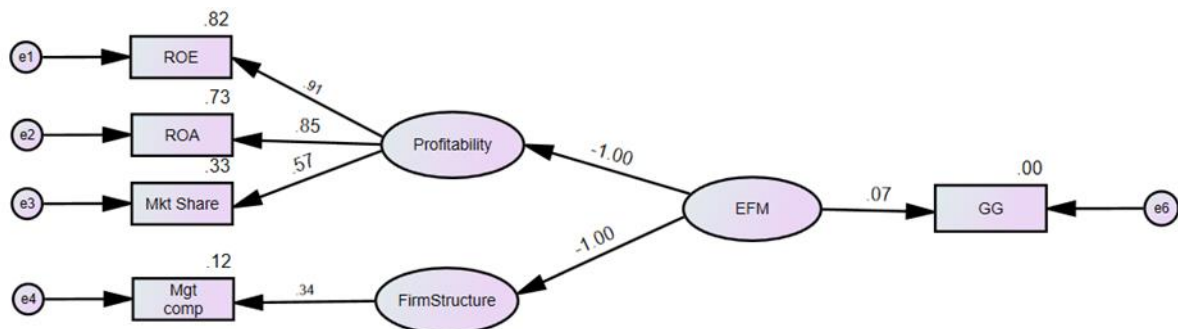
### 5.11.1 Direct Relationship between Crowdfunding and Profitability and Firm Structure



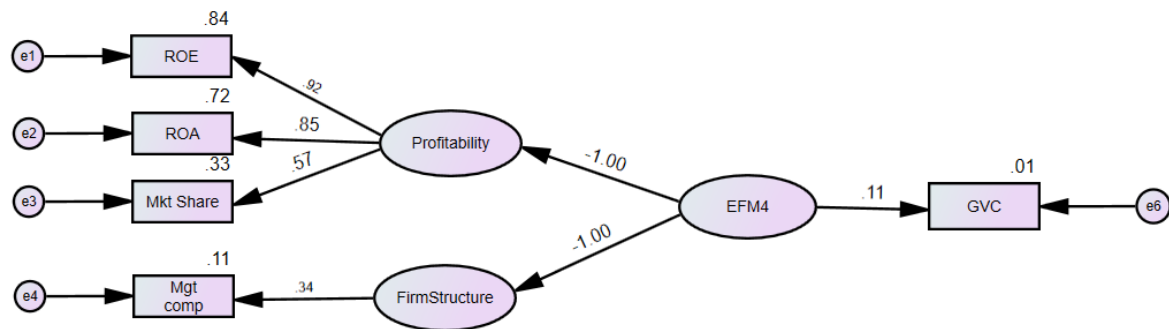
### 5.11.2 Direct Relationship between Bank and Profitability and Firm Structure



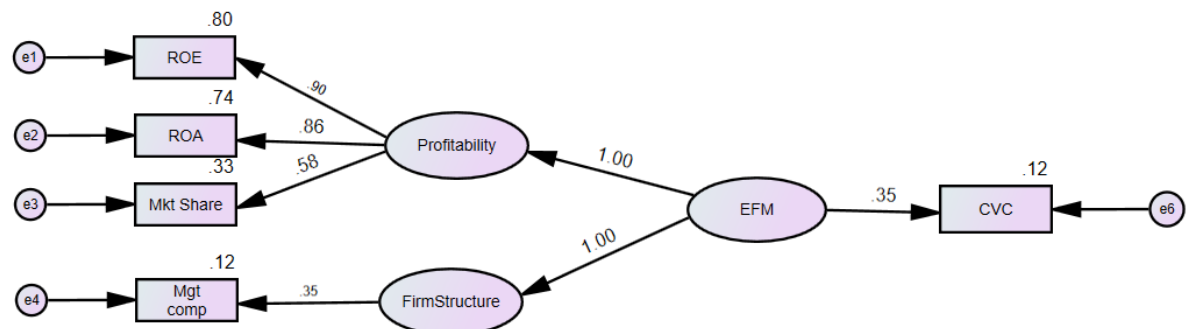
### 5.11.3 Direct Relationship between Government Grant and Profitability and Firm Structure



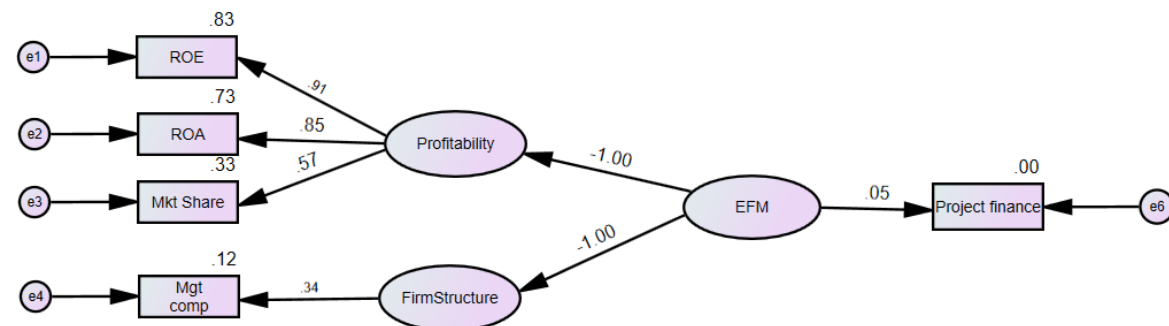
#### 5.11.4 Direct Relationship between Government Venture Capital and Profitability and Firm Structure



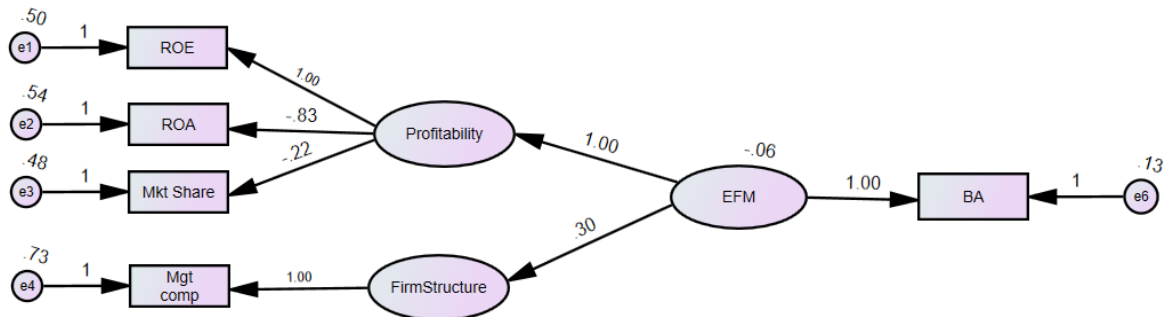
#### 5.11.5 Direct Relationship between Corporate Venture Capital and Profitability and Firm Structure



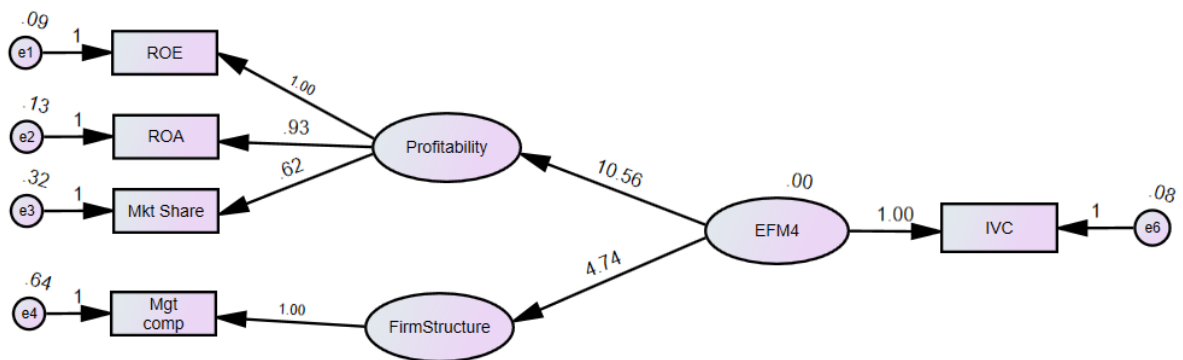
#### 5.11.6 Direct Relationship between Project Finance and Profitability and Firm Structure



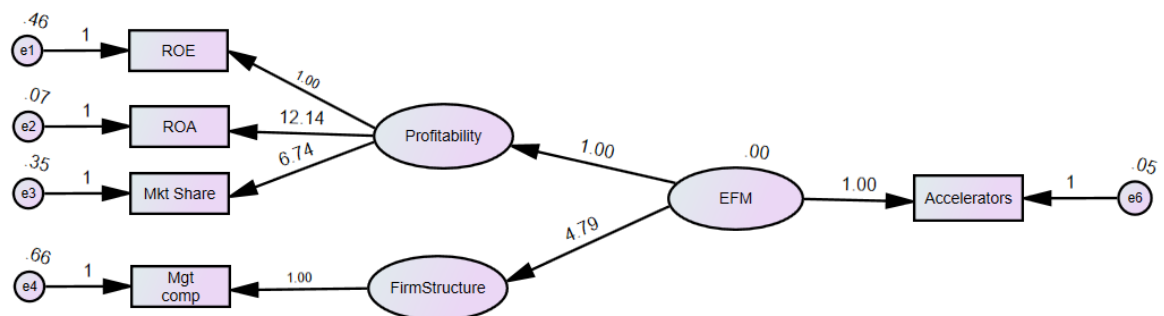
### 5.11.7 Direct Relationship between Business Angels and Profitability and Firm Structure



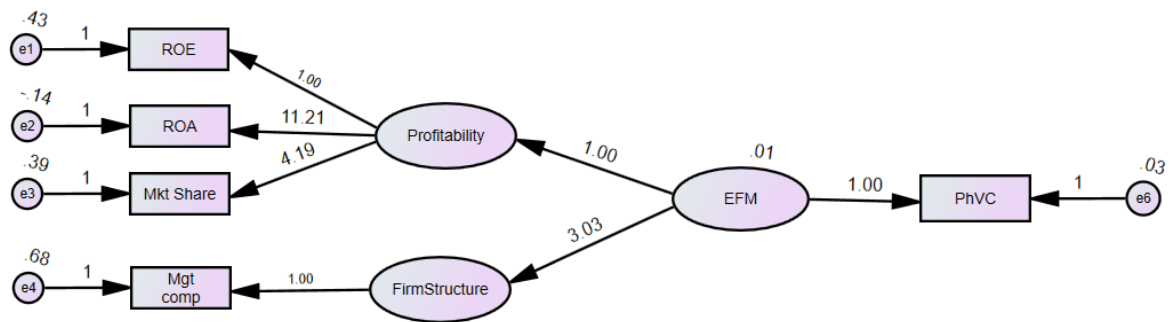
### 5.11.8 Direct Relationship between Independent Venture Capital and Profitability and Firm Structure



### 5.11.9 Direct Relationship between Accelerator and Profitability and Firm Structure



### 5.11.10 Direct Relationship between Philanthropic Venture Capitals and Profitability and Firm Structure

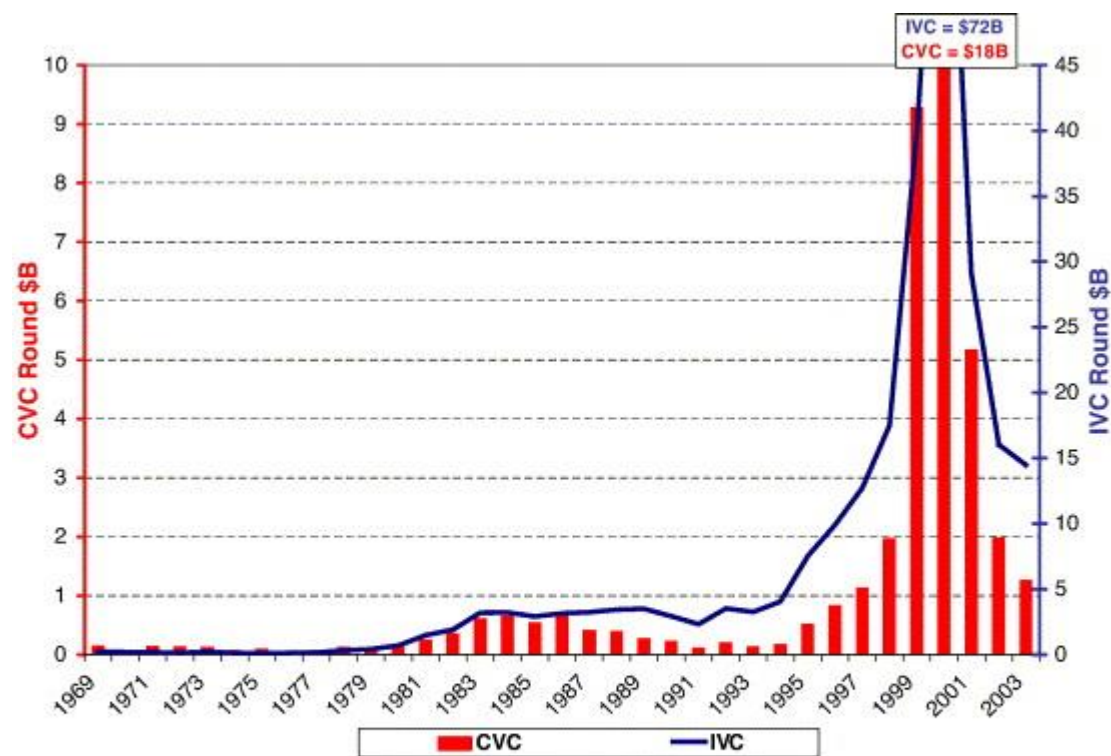




## Appendix 6.1:

### 6.1.1 Rising CVC and IVC Equity Investments in dollars

The diagram below shows the rise of CVC and IVC investments in the early 2000s. This signalled a shift from the drops experienced in the 1990s to a historic high and an opportunity for investee firms to achieve their business potentials (Dushnitsky & Lenox (2006)).



IVC (Independent Venture Capital) scale on right  
CVC (Corporate Venture Capital) scale on left

\* Data derived from Venture Economics, amounts in 2004 dollars.

## Appendix 7.1: Ethics Certificate 1



# Certificate

Number: 2161620003

This is to certify that

**Theodore Nwankwo**

of Sheffield Hallam University

Successfully completed the course

**Ethics 1: Good research practice**

as part of the Epigeum Online Course System with a score of 80%.

Dated: 10 November 2018

Copyright Oxford University Press 2018

## Appendix 7.2: Ethics Certificate 2



# Certificate

Number: 2161620004

This is to certify that

**Theodore Nwankwo**

of Sheffield Hallam University

Successfully completed the course

**Ethics 2: Research with humans in the  
health and social sciences**

as part of the Epigeum Online Course System with a score of 80%.

Dated: 30 December 2018

Copyright Oxford University Press 2018

## Appendix 7.3: Online Questionnaire Participant Information Sheet

### Request for Participation in Research Survey

I am writing to request your participation in my research thesis survey titled *Entrepreneurial Finance Models for Born-global (SMEs) in Nigeria*. The research is aimed at investigating whether and how entrepreneurial finance models impact on the outcome of born-global SMEs in Nigeria. Born-global firms are a class of small and medium enterprises (SMEs) that operate internationally near their time of inception.

[Personal information removed-GDPR]

[Paragraph removed]

Your participation will help my research provide an understanding of how the different available funding to SMEs impacts on the performance of these businesses. The findings can help businesses like yours identify better sources of funding, and how to protect themselves against financing risks.

The findings will be used in my PhD research thesis and will also be used to develop journal publications. I have provided more details about the research and how the findings will be beneficial to firms like yours below in Annex 1. By completing this questionnaire, you can benefit from having access to the findings and any publications (thesis or journal papers) which utilize the data you have provided.

All data collected in this survey will be held securely. There are no risks to you and all information you provide will be confidential. The survey does not request any data that can be associated with you or your firm and in addition, the data will be coded to protect the identity of participants. Safe standards will be adopted to encrypt and store both original and processed data collected, and this data will be held for a maximum of 10 years within the University after which it will be destroyed. This

research will not identify any individuals or firms when reporting the results, and best efforts will be adopted to ensure that no individuals or firms can be identified by implication.

The Sheffield Hallam University Ethics Review Board has approved this research. You can contact the University's Data Protection Officer - [removed-GDPR] if you have any queries about how your data is being used, or the Head of Research Ethics [removed-GDPR] – [removed-GDPR] if you have any concerns of how you have been treated during this research.

The University undertakes research as part of its function for the community under its legal status. Data protection allows us to use personal data for research with appropriate safeguards in place under the legal basis of public tasks that are in the public interest. A full statement of your rights can be found at <https://www.shu.ac.uk/about-this-website/privacy-policy/privacy-notices/privacy-notice-for-research>. However, all University research is reviewed to ensure that participants are treated appropriately, and their rights respected. This study was approved by UREC with Converis number [removed-GDPR]. Further information at [removed-GDPR]

To confirm your participation, please read and sign the consent form below and return it to me via email.

Should you have any comments or questions or wish to know more about the research, please feel free to contact me at [removed].

Thank you very much for your time and cooperation.

Sincerely,

**Theodore Nwankwo**

Doctoral Researcher/Student

Sheffield Business School

Sheffield Hallam University

Email: [removed]



## QUESTIONNAIRE PARTICIPANT CONSENT FORM

### TITLE OF RESEARCH STUDY: Entrepreneurial Finance Models and Born-global SMEs in Nigeria

*Please answer the following questions by ticking the response that applies*

- |  | YES                      | NO                       |
|--|--------------------------|--------------------------|
| 1. I have read the Information Sheet for this study and have had details of the study explained to me.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. My questions about the study have been answered to my satisfaction and I understand that I may ask further questions at any point.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. I understand that I am free to withdraw from the study within the time limits outlined in the Information Sheet, without giving a reason for my withdrawal or to decline to answer any particular questions in the study without any consequences to my future treatment by the researcher. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. I agree to provide information to the researchers under the conditions of confidentiality set out in the Information Sheet.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. I wish to participate in the study under the conditions set out in the Information Sheet.   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. I consent to the information collected for the purposes of this research study, once anonymised (so that I cannot be identified), to be used for any other research purposes.   | <input type="checkbox"/> | <input type="checkbox"/> |

To confirm your participation, please read and sign below and return it to me via email: [\[removed\]](#)

**Participant's Signature:**

**Date:** \_\_\_\_\_

**Participant's Name (Printed):** \_\_\_\_\_

**Contact details:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Researcher's Name (Printed): Theodore Nwankwo**

**Researcher's Signature: Theodore Nwankwo**

**Researcher's contact details:**

Theodore Nwankwo  
Sheffield Business School  
Sheffield Hallam University  
Sheffield, S1 1WB, UK

**Please keep your copy of the consent form and the information sheet together.**

## Appendix 8.1 Relevant Literature Reviewed

	<b>Author</b>	<b>Type of EFM or Area of focus</b>	<b>Methodology</b>	<b>Data Instrument</b>	<b>Collection</b>	<b>Performance Measure</b>
1	Munari & Toschi (2015)	GVC	Mixed methodology			Firm exit and syndication (E.g. Acquisition)
2	Onishi (2015)	PhVC	Mixed methodology	Interviews		Social performance, IRR, sales and total revenue growth
3	Fogel (2001)	Loans, family and friends, project financing and IVC	Mixed methodology	Mail surveys and telephone interviews		
4	Buchner et al. (2018)	IVC	Quantitative	Secondary (Database)	data	Exits (IPO and Mergers and Acquisitions)
5	Luukkonen et al. (2013)	GVC and IVC	Quantitative	Questionnaire		Value-addition
6	Brander, et al. (2015)	GVC	Quantitative	Secondary (Database)	data	Exits (E.g. Initial Public offering)
7	Engberg, et al. (2021)	IVC and GVC	Quantitative	Secondary (Database)	data	Sales and employment
8	Hussain et al. (2006)	SME financing in UK and China	Quantitative	Telephone Questionnaire		
9	Smolarski & Kut (2011)	IVC	Quantitative	Questionnaire survey		Sales growth rate, annual turnover and export ratio



10	Biney (2018)	IVC	Quantitative	Questionnaire		Sales and employment
11	Busch (2018)	Accelerators,BAs and GVCs	Quantitative	Questionnaire Secondary data	and	Follow-up funding
12	Bone, et al. (2019)	Accelerators	Mixed methodology	Focus group		Survival, employee growth and follow up rounds
13	García-Ochoa, et al. (2020)	Accelerators	Quantitative	Questionnaire		Firm Performance
14	Hendratmi, et al. (2019)	Crowdfunding	Qualitative	Interviews		Total assets and sales turnover
15	Havrylchyk & Mahdavi Ardekani (2020)	Crowdfunding	Quantitative	Secondary (Database)	data	ROA, ROE, asset growth, sales growth and profit margin
16	Peter, et al. (2018)	Government grants	Mixed methodology	Questionnaire interviews	and	ROS, ROA and ROE
17	Salerno (2019)	Private equity	Quantitative	Secondary (Database)	data	ROA, EBIT/TA and EBITDA/TA

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