

**EFFECT OF ENTREPRENEURIAL ORIENTATION,
TRANSFORMATIONAL LEADERSHIP AND NETWORKING CAPABILITY
ON PERFORMANCE OF MANUFACTURING FIRMS IN NAIROBI
COUNTY, KENYA**

**BY
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DECLARATION

Declaration by the Candidate

I declare that this thesis is my own original work and that it has never been presented to Moi University or any other institution of higher learning for a similar purpose or otherwise. No part of this thesis may be reproduced without prior permission of the author and/or Moi University.

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DEDICATION

To my loving husband Dr. Nebert Matelong and our bundles of joy with whom God has blessed us: Reagan Kibet, Ronald Kiprotich, Raiden Kipkoech and Rita Cherobon; they were a source of inspiration and encouragement, without which I couldn't have gone this far. My humble prayer is that God blesses their lives, everything they do and may they abide in His favour always. May the Lord bless the work of their hands and may they succeed in everything they do.

To my loving mother; her sacrifices never went unnoticed and are forever appreciated. I love her with all my heart. To My dear father; he was always there when I needed him and he made this possible, his support went a far way and I appreciate it. I am where I am because of him. May God richly bless the both of them abundantly.

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ABSTRACT

Manufacturing firms in Kenya are bedevilled with challenges associated with doing business in an environment of increasing competition and regionalization, which, if mitigation measures are not urgently instituted, are likely to have a negative impact on their performance and competitiveness. Several studies have been done on the determinants of Entrepreneurial Orientation (EO) and the performance of manufacturing firms (FP) in Kenya, though little is known about the moderated mediation effect in the relationship. Hence, this study proposed that networking capability (NC) and transformational leadership (TL) may further explain the relationship between EO and FP. Therefore, given the aforementioned argument, this study sought to examine the effect of EO, TL, and NC on performance among the manufacturing firms in Nairobi County, Kenya. The specific objectives were to: Analyse the effect of EO on FP; Ascertain the effect of NC on FP; Examine the effect of TL on FP; Determine the effect of EO on NC; Determine the mediating effect of NC on the relationship between EO and FP; Analyse the moderating effect of TL on the relationship between EO and NC, EO and FP, NC and FP; Examine the moderating effect of TL on the indirect effect of EO on manufacturing FP via NC. The study was guided by the Resource Based View theory and supported by the Dynamic capability & relational view theory. This study employed the positivism paradigm which assesses the cause that influences the outcome of study variables. The study adopted an explanatory research design with the aid of questionnaires to collect data. The study utilized primary data which was collected from a sample of 400 manufacturing firms using structured questionnaires which was derived from the target population that comprised of 1072 manufacturing firms in Nairobi County. The sample selection techniques used were stratified random sampling. Reliability testing using Cronbach's Alpha testing was used to test the appropriateness of the questionnaire in the study. Hierarchical Regression was used to test the study hypotheses. Results for the direct effects were as follows: EO had a significant direct effect on EP with $\beta = .85$, $p < .001$ with $R^2 .71$, and $\Delta R^2 .69$, $F(3,396) = 321.77$, $p < .001$; EO and NC on FP equally had a significant direct effect with $\beta = .56$, $p < .001$ and $\beta = .50$, $p < .001$ with $R^2 .87$ and $\Delta R^2 .18$, respectively with a statistically significant $F(4,395) = 767.07$, $p < .001$. NC and TL on FP showed significant effects with $\beta = .31$, $p < .001$ and $\beta = .38$, $p < .001$ respectively, with $R^2 .96$ and $\Delta R^2 .08$, with a statistically significant $F(5,394) = 1929.08$, $p < .001$. To test for mediation and moderated mediation, the study utilized Process Macro Version 4.0 model 4 and model 59 respectively. The study findings reported mediation effect of NC as positive and significant indicating $M3 = (a_1 \times b_1) = .56 \times .50 = .28$, $SE = .05$, $95\% CI = [.17, .37]$, which was significant with the confidence interval (CI) not straddling a zero. Furthermore, results showed that TL had a moderating effect on the relationship between EO and NC, EO and EP, NC and EP with the interaction results found to be significant with $\beta = -.13$, $p < .001$; $\beta = .03$, $p = .005$; $\beta = -.02$, $p = .006$ respectively. Lastly, moderated mediation was evident as follows; $(a_1 + dW)(b_1 + fW) = (.56 + .03) * (.50 + [-.02]) = .28$. Conclusively, networking capability and transformational leadership significantly affect the relationship between Entrepreneurial orientation and Firm performance. The study recommends that manufacturing firms should instil the resource of entrepreneurial orientation through a blend of networking capability and transformational leadership so as to strategically enrich firm performance. Additionally, it calls for the extension of this research on the used theories on this topic by using other methods like longitudinal and other approaches in variety of sectors with a global view.

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ABBREVIATIONS AND ACRONYMS

CEOs	-	Chief Executive Officers
CTL	-	CEO transformational leaders
EC	-	European Commission
EFA	-	Exploratory Factor Analysis
EO	-	Entrepreneurial Orientation
FP	-	Firm Performance
GDP	-	Gross Domestic Product
GEM	-	Global Entrepreneurship Monitor
IFC	-	International Finance Corporation
KAM	-	Kenya Association of Manufacturers
NC	-	Networking Capability
NES	-	National Expert Survey
NGOs	-	Non Governmental Organizations
OECD-	-	Organization for Economic Cooperation and Development
PCA	-	Principal Component Analysis
R&D	-	Research and Development
RBV	-	Resource Based View
ROK	-	Republic of Kenya
SO	-	Strategic Orientation
SPSS	-	Statistical Package for Social Sciences
TCEOs-	-	Transformational CEOs
TL	-	Transformational Leadership
TMT	-	Top Management Team
VIF	-	Variance Inflation Factor

OPERATIONAL DEFINITION OF TERMS

Entrepreneurial Orientation: It refers to specific organization-level behaviour to perform risk taking, self-directed activities, engaged in innovation and react proactively and aggressively to outperform the competitors in the market place. Entrepreneurial Orientation is now afforded five dimensions: innovativeness, risk taking, pro-activeness, competitive aggressiveness and autonomy (Lumpkin *et al.*, 2009).

Manufacturing Firm Performance: It is the operational ability of a firm to satisfy its stakeholders and must be assessed to measure a firm's accomplishment. In addition, performance can reflect the means by which an organization achieves organizational goals and as a source of direction in helping organizations to appropriate resources in the future (Lin, 2005). In the study it was measured using sales growth, profit margin, customer's satisfaction, repeat customer transactions and customer references.

Networking capability: It is the competency of a firm to purposefully search and find network partners, and manage and leverage network relationships for value creation (Mu and Di Benedetto, 2012). This was measured using finding network partners, managing network relationships and leveraging network relationships.

Transformational Leadership: can be defined as the style of leadership that can engage the organization's employees and encourage them to achieve the firm's targets. Transformational leaders can be used to promote better performance by motivating individuals to collaborate in the pursuit of the firm's higher-level objectives (Sun *et al.*, 2014). This was measured using articulating a vision, providing an appropriate model, facilitating acceptance of group goals, having high expectations, showing supportive leadership behaviour and offering intellectual stimulation.

CHAPTER ONE

1.0 Introduction

This chapter covers the following aspects: Background of the study; Study context; Statement of the problem; Research objectives; Research hypotheses; Justification/significance of the study; and Contribution and scope of the study.

1.1 Background of the Study

A greater grasp of the factors that drive firm success is critical in today's fast-paced corporate contexts. Firms are obliged to use effective techniques to reach and surpass organizational performance targets due to growing competition, technology advancements, and fast changing client needs (Mammassis & Kostopoulos, 2019; Tang, 2017). Manufacturing firms play a crucial role in the global, regional, and local economies, contributing to economic growth, employment generation, and technological advancements. In Nairobi County, Kenya, the manufacturing sector is a significant driver of economic activity (KAM 2018).

In the global context, manufacturing firms face challenges stemming from intense market competition, rapidly evolving technologies, and shifting consumer preferences. Globalization has exposed these firms to a more competitive environment, necessitating entrepreneurial strategies that foster innovation, market responsiveness, and adaptability (Tang 2017). Additionally, in the regional context, African manufacturing firms encounter challenges related to infrastructure deficiencies, trade barriers, and access to capital (African Development Bank, 2018). Regional integration efforts, such as the African Continental Free Trade Area (AfCFTA), seek to address these challenges by promoting intra-African trade and improving market access for manufacturing firms (World Bank, 2019).

Consequently, at the local level in Nairobi County, manufacturing firms grapple with issues such as inconsistent policy frameworks, inadequate infrastructure, and access to skilled labour (Otieno *et al.*, 2012). Additionally, the entrepreneurial orientation of these firms and the effectiveness of leadership in navigating these challenges have not been thoroughly explored in the Nairobi context. This research focussed on manufacturing firms located within Nairobi County, encompassing various sub-sectors such as food processing, textiles, and construction materials. It aimed to investigate the relationship between entrepreneurial orientation, transformational leadership, networking capability, and firm performance and the moderated mediated effect of TL on the indirect relationship of EO on FP via NC. The study employed explanatory research design, gathering data from a sample of manufacturing firms in Nairobi County. It analysed the impact of these variables on various performance indicators, including financial performance, market share, and customer satisfaction.

While previous research have explored factors affecting firm performance globally, regionally, and locally, there remains a dearth of studies specifically examining the combined effects of entrepreneurial orientation, transformational leadership, and networking capability on manufacturing firm performance within the context of Nairobi County. Research often tends to focus on isolated factors, without considering their synergistic impact on manufacturing firms' performance in the region.

Many studies have found that entrepreneurial orientation (EO) has a positive impact on firm growth, profitability, innovation, and overall performance, and that it can improve firm performance. EO is also seen as a driver of firm success and performance (Smith, A.R *et al.*, 2023; Young Min *et al.*, 2019; Gupta & Wales, 2017), particularly for manufacturing firms (Young *et al.*, 2019; Gupta & Wales, 2017; Tang *et al.*, 2017; Thanos *et al.*, 2017).

Miller (1983) & Covin & Slevin (1989) were among the first to propose the EO construct. Since then, EO has sparked a slew of research; (Wales, 2016) discovered that it accurately captures actual entrepreneurial firm behavior; (Stambaugh et al., 2017) discovered that EO is positively associated to firm performance (Jiang et al., 2016). EO has also become a key concept in the literature on entrepreneurship and strategic management, since it has helped to define the meaning for a company to have an entrepreneurial strategic stance (Rauch et al., 2009). As a result, the relationship between Entrepreneurial Orientation and FP has become the primary focus of EO research to date. EO has been linked to improved company performance in a number of studies (Jiang et al., 2016; Gupta & Batra 2016). This means that firms that adopt more EO perform better than those with lack of such orientation (Laukkanen et al., 2013). In addition, one of the most widely used constructs to assess firm entrepreneurship is EO (Miller, 1983) and a firm is considered to be entrepreneurial if it is innovative, proactive and risk-taking.

According to empirical evidence, EO characteristics can have varying effects on firm performance depending on the company's situation. According to Linton & Kask (2017), taking risks, being inventive, and being proactive are all independent and significant variables in company performance. Furthermore, Wee *et al.*, (2018) discovered that innovativeness and risk taking have a negative association with company performance, indicating that they are ineffective in enhancing firm performance. However, the study found that various other elements, including autonomy, competitive aggressiveness, and proactiveness, have a considerable impact on company performance. Another study by Gabrielsson & Gabrielsson (2013) found that proactiveness and innovativeness are essential elements in EO for firm performance during the early stages of a company's development. However, according

to this study, a high level of entrepreneurship in the later phases of a company may jeopardize the organization's sustainability. Eshima & Anderson (2016) found that EO's potential to create value is influenced not just by senior management, but also by manager levels. Muhamad *et al.*, (2015), on the other hand, discovered that innovativeness, risk taking, and competitive aggressiveness had no direct association with performance, however proactiveness and autonomy had a favorable relationship with company performance.

Many different mediating and moderating variables have been explored to understand the mechanism by which EO improves business performance, but few research have looked at the moderated mediated influence on the connection. Thus, including other aspects that will assist businesses in reducing performance variation and understanding the mechanisms via which EO might lead to high success are crucial stages in enhancing EO theory (Young-min *et al.*, 2019; Wales 2016). According to some academics, looking at the direct effect of EO on company performance will not provide a whole picture of the relationship. As a result, the majority of academics have used other variables to model EO-firm performance (Karami & Tang 2019; James *et al.*, 2014). As a result, several research on EO and performance have been conducted, albeit few have looked at networking as a mediator and transformational leadership as a moderator in the connection. Building on this line of research and in response to a call for more research into the mechanisms by which EO affects firm performance (Wee *et al.*, 2018), this study sought to look at networking and transformational leadership as two important mechanisms for the EO-performance relationship, digging deeper to discover the link between these constructs in the context of manufacturing firms. As a result, this study aimed to add to the EO-

Performance literature by looking at the relationship's moderated mediation effect of networking capability and transformational leadership.

In today's highly competitive world, businesses cannot rely solely on internally managed resources to pursue advantage-creating and advantage-enhancing initiatives (Gaudici, 2013). They are pushed to work with other companies to obtain access to information, skills, knowledge, assets, and technology, allowing them to better use their own resources. Diverse strategic preferences result in different needs, incentives, and collaboration opportunities with other market actors such as competitors, distributors, suppliers, and customers. As a result, some patterns of strategic behavior in enterprises can lead to distinct and recognizable patterns of networking behavior, which leads to predictable types of network structure (Gaudici, 2013). The relationship between EO and business performance is often believed to be strengthened by network orientation and relationships (Walter *et al.*, 2006; Stam & Elfring, 2008; Zhang and Zhang, 2012). For example, Walter *et al.*, (2006) show how a firm's network capability, or its ability to build and leverage inter-organizational ties, improves the link between EO and spin-off company performance. In other words, EO will have a greater impact on firm performance in a corporation that is able to create network links.

Furthermore, a study of Korean business incubators found that EO predicts some type of entrepreneurial network, which can be operationalized as a market, financial, or social network (Ban *et al.*, 2009). With a focus on social network analysis, researchers looked at the ties between entrepreneurs and people who offer the resources needed to start a business (Larson, 1991). Entrepreneurs have ideas to test and a basic understanding of how to manage a business, but they also require additional resources to produce and sell their goods or services. Through their social networks, they gain

support, information, and access to distribution channels. Entrepreneurs are also connected to people and organizations that interact with one another, and these connections can expand the pool of resources available to support a new business (Hansen, 1995). To establish a firm, entrepreneurs need information, capital, skills, and labor. While they may have some of these resources on hand, they frequently supplement them by utilizing their contacts (Cooper *et al.*, 1995). Their social capital consists of the contacts that contribute to successful outcomes, and they are an important component of entrepreneurial networks (Burt, 1992).

As a result, networking is vital in forecasting business performance, and researchers have discovered that networking and firm performance have a positive association. This positive influence is the outcome of mutually beneficial knowledge and resource exchange (Thrikawalla, 2011). Furthermore, it has been discovered that network range, which refers to the diversity and quantity of connections, has a favorable impact on company performance. This is conceivable because the larger the external network, the more resources are available. A social network supports businesses in obtaining these resources at the lowest possible cost, as this is one of their primary strategies, and when they do so, their performance is likely to improve (Elfring & Hulsink, 2003). In addition, the type of network, whether formal or informal, was found to have a beneficial impact on company performance. Some small businesses choose to use formal networks, while others prefer to use informal networks. Both have been shown to have a positive impact on business performance (Shaw, 2006).

Previous research on business performance has tended to disregard the manner in which firms are networked and the moderating influence of transformational leadership. According to the GEM 2017 study, businesses should establish a social network that functions as a mentorship, consulting, or advising group to help with all

aspects of business. As a result, while a large body of research suggests that transformational leaders influence followers to reach higher levels of performance, certain studies have produced inconsistent results (Chun, *et al.*, 2016; Han, *et al.*, 2018; Ng, 2017; Nguyen, *et al.*, 2017).

In addition, other studies indicated that not all transformational leadership dimensions were associated with firm performance, and in certain situations, only marginally significant associations were discovered. Other research have found that intellectual stimulation and inspiring motivation had the highest effects of transformational leadership on firm performance. The outcomes of that study revealed that the most effective way to boost firm performance is to encourage followers' creativity and encourage them to try out novel problem-solving ways. According to the study, CEOs who clearly articulate their companies' vision and demonstrate a strong dedication to that vision and the execution of company goals have a positive effect on firm performance (Jensen, M. *et al.*, 2020).

This study aimed at addressing the identified gap in the literature by conducting a comprehensive examination of the moderated mediated effect of TL on the indirect relationship between entrepreneurial orientation and firm performance via networking capability among manufacturing firms in Nairobi County. By doing so, it provided contemporary insights at the local levels, offering a nuanced understanding of the factors that drive manufacturing firm success in the region. Through practical recommendations, the research contributed to enhancing the competitiveness and sustainable growth of manufacturing firms in Nairobi County.

1.2 Study Context

This study was undertaken within the context of establishing the influence of Entrepreneurial Orientation on manufacturing firms in Nairobi County, Kenya, through Networking capability and further the moderating role of Transformational Leadership (TL) on the overall relationship. The study focused on manufacturing firms since the manufacturing sector is one of the agendas under the big four agenda put forward by president Uhuru Kenyatta according to the 2018 Budget statement, and their performance is not as anticipated yet (GoK, 2018). In Kenya, manufacturing firms are operating in increasingly competitive, highly regulated and dynamic market and hence they have to formulate strategies to ensure their survival (Otieno *et al.*, 2012). Many changes and an increasingly turbulent environment have characterized the manufacturing industry in Kenya (KAM, 2018). Thus, many large manufacturing firms such as Colgate Palmolive, Reckitt Benckiser, Cadbury Kenya, Bridgestone, Devki Steel and Procter & Gamble have relocated or restructured their operations opting to serve the local market through importing from low-cost manufacturing areas such as Egypt, South Africa and India therefore resulting in job losses (Nyabiage & Kapchanga, 2014). This is an indication that many manufacturing firms in Kenya are experiencing performance challenges with many reporting profit warnings due to challenges in the operating environment (RoK, 2015). Statistics from World Bank show that manufacturers operate in Kenya registered stagnation and declining profits for the last five years due to a turbulent operating environment (WB, 2015). Various research studies have confirmed that Entrepreneurial Orientation greatly influences performance of manufacturing firms in other parts of the world, this trend has been replicated globally, more so for manufacturing firms (Bereket, 2017). Additionally, manufacturing firms in Kenya face a myriad of challenges associated with doing

business in an environment of increasing competition and regionalization, which, if mitigation measures are not urgently instituted, are likely to have a negative impact on their performance and competitiveness. It is in this respect that, manufacturing firms need to adopt entrepreneurial orientation if they desire to enhance their performance and competitiveness. The need to adopt EO by manufacturing firms becomes more urgent. Therefore, this study aimed at determining the effect of EO on manufacturing firm performance through networking and the moderating role of TL on the relationship in Nairobi County. The study focused on manufacturing firms in Nairobi County since majority of these firms are located in Nairobi city and its environs (KAM 2018).

1.3 Statement of the Problem

The manufacturing sector in Kenya plays a crucial role in the country's economic development, providing employment, fostering innovation, and contributing to GDP. However, various challenges hinder the optimal performance of manufacturing firms in Kenya, impacting the industry's growth potential and overall economic stability. In an ideal scenario, the manufacturing sector in Kenya should thrive with sustained growth, high levels of productivity, enhanced competitiveness, increased export capacity, and a conducive business environment. A well-functioning manufacturing sector would significantly contribute to job creation, poverty reduction, and economic development, aligning with the goals outlined in Kenya's Vision 2030 development blueprint.

The reality, however, presents a different picture. The manufacturing sector in Kenya faces multiple challenges, including but not limited to inadequate infrastructure, high production costs, policy inconsistencies, inadequate access to financing, limited

skilled labour, suboptimal technology adoption, and an unpredictable regulatory environment (WB, 2019). These challenges hinder the industry's ability to reach its potential, limiting its contribution to the country's economic growth.

Consequently, failure to effectively address the challenges facing the manufacturing sector in Kenya will have dire consequences for the country's economic stability and growth prospects. A stagnant or declining manufacturing sector will result in reduced employment opportunities, increased reliance on imports, weakened industrialization efforts, and heightened vulnerability to external economic shocks (African Development Bank, 2018). Moreover, it will impede the achievement of sustainable development goals, hampering poverty reduction efforts and the overall quality of life for the population. In conclusion, addressing the challenges faced by manufacturing firms in Kenya is crucial for realizing the desired ideal situation of a thriving and competitive manufacturing sector. Failure to do so will not only hinder the growth and development of the industry but also have severe implications for the country's economy and its ability to achieve its socio-economic objectives.

A lot of effort is being put by countries towards enhancing the manufacturing sector's performance however the sector has not experienced much growth. Despite their significance, past statistics indicate that the sector's contribution towards the economy has been declining in the past few years (Kenya National Bureau of Statistics, 2018). Studies have therefore been done on manufacturing firm performance and there has been a focus on entrepreneurial orientation and its influence on performance. The relationship between EO and corporate performance has become a primary topic of interest for EO researchers, with conflicting results so far. Several studies have found a positive relationship between EO and performance (Tang *et al.*, 2017; Thanos *et al.*,

2017); others have found a non linear relationship (Khotamaki 2019; Tang & Tang 2017); others have revealed that risk taking has a negative effect on firm performance (Gudmundsson, 2014; Kraus *et al.*, 2012); and still others have found that there is no significant relationship between EO and firm performance (Khotamaki (Covin *et al.*, 1994; Lee *et al.*, 2004). According to research that suggest EO has a favorable association with firm performance, firms who use it more perform better than those with lack of such orientation (Li *et al.*, 2009; Hughes & Morgan, 2007).

In Kenya, studies on the EO-performance relationship have been conducted, with findings indicating both a positive and negative relationship (Nehemiah & Loice 2015; Angeline *et al.*, 2016). These links could be related to the fact that today's dynamic business climate shortens product life cycles and increases uncertainty. Furthermore, the activities of both competitors and customers are unpredictable. As a result, businesses must innovate on a frequent basis, predict demand, manage for risk, and aggressively compete to keep or gain new market positions. However, depending on their position in the industry (leader/follower), the manner in which they accomplish this may differ. (Wiklund & Shepherd, 2005; Rauch *et al.*, 2005; Covin *et al.*, 2006; Wiklund *et al.*, 2005).

Furthermore, studies have been conducted on the association between EO and networking, and positive results have been obtained (Gaudici 2013; Stam 2010). As a result, the relationship between networking and business performance has been researched, and these studies show a positive relationship between networking and firm performance, implying that networking leads to improved firm performance in the end (Thrikawala 2011; Farinda *et al.*, 2009). Following these findings, it is clear that EO and networking, as well as networking and firm performance, have a relationship.

According to empirical evidence, transformational CEOs make strategic decisions and initiate organizational change that have a strategic impact on the firm's innovation (Nguyen *et al.*, 2017) and performance, allowing it to better adapt to changing conditions. Other research shows that TCEOs can improve business performance by cultivating a TMT trust climate. As a result, it's not surprising that several research have found a link between CTL (and its charismatic feature) and business performance (Lin *et al.*, 2016). Another study, on the other hand, shows that CTL has both a positive direct and a negative indirect influence on business performance (Jian. *et al.*, 2019).

As such, this study therefore proposed that networking can mediate the EO-performance relationship since reviewed literature reveals that EO has a relationship with networking and consequently networking has a relationship with firm performance. Additionally, transformational leadership can also moderate the relationship since RBV and upper echelons theory show that TL can be a moderator in the relationship. Hence this study therefore sought to investigate the mediating role of networking capability and the moderating role of transformational leadership in the relationship between entrepreneurial orientation and manufacturing firm performance in Nairobi County, Kenya. This study proposed that since Entrepreneurial Orientation (EO) provides direction for organizations to pursue new opportunities in the marketplace, effective implementation of EO requires transformational leadership behaviours on the part of manufacturing firms which can further utilize their networks better so as to enhance their firms' performance.

1.4 Research Objectives

The study's general objective and specific objectives were as follows:

1.4.1 General Objective:

This study sought to determine the effect of Entrepreneurial Orientation, Transformational Leadership and Networking capability on the Performance of manufacturing firms in Nairobi County, Kenya and the moderated mediation effect of transformational leadership on the indirect relationship between entrepreneurial orientation and firm performance via networking capability.

1.4.2 Specific Objectives:

The specific objectives of this study were to:

1. Analyse the effect of entrepreneurial orientation on the performance of manufacturing firms.
2. Ascertain the effect of networking capability on manufacturing firm performance.
3. Examine the effect of transformational leadership on the performance of manufacturing firms.
4. Determine the effect of entrepreneurial orientation on networking capability.
5. Determine the mediating effect of networking capability on the relationship between entrepreneurial orientation and performance of manufacturing firms.
6. Analyse the moderating effect of transformational leadership on the relationship between entrepreneurial orientation and networking capability among the manufacturing firms.
7. Determine the moderating effect of transformational leadership on the relationship between entrepreneurial orientation and performance of manufacturing firms.

8. Ascertain the moderating effect of transformational leadership on the relationship between networking capability and performance of manufacturing firms.
9. Examine the moderating effect of transformational leadership on the indirect effect of entrepreneurial orientation on manufacturing firm performance via networking capability.

1.5 Research Hypotheses:

The study's research hypotheses were as follows:

- H₀₁: There is no significant relationship between entrepreneurial orientation and performance of manufacturing firms.
- H₀₂: There is no significant relationship between networking capability and performance of manufacturing firms.
- H₀₃: There is no significant relationship between transformational leadership and performance of manufacturing firms.
- H₀₄: There is no significant relationship between entrepreneurial orientation and networking capability.
- H₀₅: Networking capability has no mediating effect on the relationship between entrepreneurial orientation and performance of manufacturing firms.
- H₀₆: Transformational leadership has no significant moderating effect on the relationship between entrepreneurial orientation and networking capability among the manufacturing firms.
- H₀₇: Transformational leadership has no significant moderating effect on the relationship between entrepreneurial orientation and performance of manufacturing firms.

H₀₈: Transformational leadership has no significant moderating effect on the relationship between networking capability and performance of manufacturing firms.

H₀₉: Transformational leadership has no significant moderating effect on the indirect effect of entrepreneurial orientation on performance of manufacturing firms via networking capability.

1.6 Significance of the Study

This study examined entrepreneurial orientation, transformational leadership and networking on the performance of manufacturing firms in Nairobi County, Kenya. The study was justified on grounds that research on entrepreneurial orientation, transformational leadership, networking and firm performance is of essence especially in Kenya. Further, the concept of networking is a contemporary issue in strategic management and few studies have examined the role of networking as a mediator in the relationship between entrepreneurial orientation and performance and transformational leadership as a moderator. This study was expected to be of benefit to academicians, practitioners and researchers in the same field who would be able to borrow a leaf from the study's findings. It would also be beneficial to the government and the policy makers and also business managers/owners in the manufacturing industry. The study would help them adopt appropriate strategies in their respective organizations which would enhance Entrepreneurial Orientation through networking, thereby enhance firm performance.

1.7 Scope of the Study

This study aimed at investigating whether networking capability mediates the relationship between entrepreneurial orientation and performance of manufacturing firms in Nairobi County, and the moderating role of transformational leadership on

the relationship. This study took place between January to April 2022 during which data collection, analysis and interpretation was done. This study hence sought to contribute to the EO-Performance research area by introducing networking capability as a mediator and transformational leadership as a moderator in this relationship. The study also sought to contribute to the body of knowledge through publication. Further this study sought to benefit the manufacturing industry, government, donor funds and also the educators among others who can borrow a leaf from this study's findings. The scope of this study was limited to Entrepreneurial Orientation, Networking capability, transformational leadership and manufacturing firm performance in Nairobi County, the capital city of Kenya. This was because many studies have been done on the direct effect of EO on FP, and other studies have further suggested testing the effect of other intervening variables to enhance EO-FP relationship (Young- min *et al.*, 2019; Karami & Tang 2019). However, the scope of the literature reviewed is not limited to Kenya only. The study was guided and informed by the following theories due to their relevance in this study; The Resource Based view (Barney 1991); Dynamic capability & relational view theory (Teece *et al.*, 1997, Dyer & Singh 1998); Social Capital theory; entrepreneurial orientation theory (Miller 1983, Lumpkin & Dess 1996) and transformational leadership theory. Further, this study employed the positivism world view which assesses the cause that influences the outcome of study variables and an explanatory research design. The strategy for inquiry was survey which is a common strategy in Business and Management research. Lastly data was analyzed using several techniques that is, descriptive statistics (means and standard deviation) and inferential statistics (Pearson correlation, hierarchical regression and conditional process analysis model 4 and model 59 for mediation and moderated mediation respectively).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the following aspects; the concept of firm performance; the concept of entrepreneurial orientation; the concept of networking capability; the concept of transformational leadership; theoretical perspectives; empirical studies; the conceptual framework; summary and gaps.

2.2 The Concept of Firm Performance

In today's environment, firm performance is a critical issue for entrepreneurs. This implies that performance is the operational ability of an enterprise to satisfy its stakeholders and must be assessed to measure an enterprise accomplishment. In addition, performance can reflect the means by which an organization achieves organizational goals and as a source of direction in helping organizations to appropriate resources in the future. That is, all conceptualization of organizational properties is related to the essence of firm performance and it is the final goal of the rationality of organizational design (Zulkiffli & Parera, 2011; Lin, 2005). Consequently, Entrepreneurship can disrupt most industrial sectors, forcing significant changes in product and service offerings, new logistics processes, and new business models. Thus, the degree of entrepreneurs' participation in various industries is of importance. The Global Entrepreneurship Monitor (GEM) tracks entrepreneurs around the world in a variety of industries, assessing entrepreneurial activity in the top ten industries which include: wholesale/retail, health, education, government and societal services, professional services, manufacturing, administrative services, Information and Communication Technology (ICT), agriculture and personal/consumer services (GEM report 2017).

Further, performance can reflect the means by which an organization achieves organizational goals and as a source of direction in helping organizations to appropriate resources in the future. In organizational behavior, performance is the core of organizational theories. That is, all conceptualization of organizational properties is related to the essence of firm performance and it is the final goal of the rationality of organizational design. Firm performance is a measurement of the degree of the organizational goal achievement. Scholars show a renewed interest since the mid-nineties on firm performance. Firms' performance also refers to the level of success of a firm (Yin *et al.*, 2014).

2.3 The Concept of Entrepreneurial Orientation

One of the most widely used constructs to assess firm entrepreneurship is Entrepreneurial Orientation (EO) (Miller, 1983). Entrepreneurial Orientation is one of the dimensions of Strategic Orientation (SO). Walker & Ruekert (1987) describe Strategic Orientation as the manner in which an organization decides to compete. It also includes the accomplishment, maintenance, and pursuit of competitive advantage (Tajeddini *et al.*, 2017). Entrepreneurial orientation is a corporation's tendency towards "the pursuit of new market opportunities and the renewal of existing areas of operation" and it promotes a highly proactive approach toward tolerance of risk, market opportunities, and receptiveness to innovation (Kraus, 2013; Tajeddini & Trueman, 2012; Fernandez-Mesa & Alegre, 2015; Jiang *et al.*, 2018). Consequently, the capability to take risks, initiate change, and innovate distinguishes entrepreneurial companies from others (Rauch *et al.*, 2009; Chen *et al.*, 2012; Kraus, 2013; Aboelmaged, 2018). An entrepreneurial orientation further fosters the spirit needed to create new business opportunities from on-going practices and to revitalize stagnant

firms, often through the introduction of breakthrough innovations (Kraus, 2013; Rauch *et al.*, 2009; Chen *et al.*, 2012; Tajeddini, 2010).

A firm is further considered to be entrepreneurial if it is innovative, proactive and risk-taking. The concept of EO emerged in the 1970s (Edmond & Wiklund, 2010) and has since then evoked a large number of studies (Wales, 2016). EO is found to closely reflect actual entrepreneurial firm behaviour (Stambaugh *et al.*, 2017) and is generally found to be positively related to firm performance (Wang, 2008). As pointed out by Wang (2008), an important message from the findings in the literature on the EO-performance relationship is that simply investigating the direct effect of EO on firm performance does not provide a complete picture. To unravel the mechanism by which EO improves firm performance, many different mediating and moderating variables have been studied (Rauch *et al.*, 2009).

Entrepreneurial Orientation construct represents the process of entrepreneurship, and it refers to the process, practices, decision-making styles and behaviours that lead to “entry” into new or established markets with new or existing goods or services (Lumpkin & Dess, 1996; Wiklund & Shepherd, 2005; Kraus *et al.*, 2012). According to Wiklund & Shepherd (2005), EO can be defined as a firm’s strategic orientation, capturing specific entrepreneurial aspects of decision-making styles, methods and practices. Entrepreneurial Orientation has further been defined as the processes, structures and behaviours of firms characterised by innovativeness, pro-activeness, risk-taking, competitive aggressiveness and autonomy. EO is now afforded five dimensions: innovativeness (supporting and encouraging new ideas as well as experimentation and creativity); risk-taking; pro-activeness (exploiting first-mover advantages and anticipating future events); competitive aggressiveness (the intensity of a firm’s efforts to outperform competitors, ambitious market share goal-setting or

aggressive actions such as price cutting); and autonomy (independent decision-making). (Lumpkin & Dess, 1996; Lumpkin *et al.*, 2009).

While there is no single agreed definition of EO, it is commonly regarded as firm-level entrepreneurship focused on opportunity recognition and exploitation: ‘more precisely, EO is a strategic business unit (SBU) level phenomenon where the “unit” can range from a non-diversified small to medium-sized enterprise (SME) to a single business unit of a multi business firm’. A further argument is that EO can be considered to be the specific manner in which firms act upon opportunities, or as activities that lead to new entry (Covin & Wales, 2011; Covin & Lumpkin, 2011; Miller, 1983; Lumpkin & Dess, 1996).

Entrepreneurial Orientation (EO) became a salient concept within Strategic Management and Entrepreneurship literature. In the last twenty years, scholars who reviewed previous EO-performance relationship studies revealed that an increase in the quantity of such studies has occurred around the world. Therefore, they concluded that “EO represents a promising area for building a cumulative body of relevant knowledge about entrepreneurship”. Entrepreneurial orientation further has its roots in the strategy making process literature. Strategy making is an organization wide phenomenon that incorporates planning, analysis, decision making, and many aspects of an organization’s culture, value system, and mission. Consistently, strategy making is “important, in terms of the actions taken, the resources committed, or the precedents set.” EO thus represents the policies and practices that provide a basis for entrepreneurial decisions and actions. Therefore, EO may be viewed as the entrepreneurial strategy-making processes that key decision makers use to enact their firm’s organizational purpose, sustain its vision, and create competitive advantage(s)

(Mintzberg *et al.*, 1976; Rauch, *et al.*, 2009; Kreiser *et al.*, 2002; Morris *et al.*, 2008; Mintzberg, 1973; Hart, 1992)

Some scholars use different terminologies in discussing this firm-level behaviour in entrepreneurship, such as strategic posture, corporate entrepreneurship and entrepreneurial orientation. However, entrepreneurial orientation (EO) is the most widely applied. Entrepreneurial orientation also refers to the specific organisational-level behaviour to perform risk-taking, self-directed activities, engaged in innovation and react proactively and aggressively to outperform the competitors in the marketplace. According to other scholars, “EO represents the policies and practices that provide a basis for entrepreneurial decisions and actions”. (Covin & Slevin, 1991; Zahra & Covin, 1995; Zahra *et al.*, 1999, Kuratko, 2007; Lumpkin & Dess, 1996; Becherer & Maurer, 1997; Lyon *et al.*, 2000; Moreno & Casillas, 2008; Lumpkin & Dess, 1996; Rauch, *et al.*, 2009).

In other words, EO refers to how the firm acts entrepreneurially. As firm behaviour is the central and essential element in the entrepreneurial process, it has been the reason why some researchers are interested in investigating EO. Previous studies showed that EO is a key ingredient for organisational success and has been found to lead to higher performance while others also suggested that EO is source of competitive advantage. Arguably, firms that possess higher levels of EO will perform better than those with lower level of EO. By adopting higher levels of EO, it allows the firms to have the ability to identify and seize opportunities in a way that differentiates them from non-entrepreneurial firms (Wiklund & Shepherd, 2005; Rauch *et al.*, 2009).

2.3.1 Entrepreneurial Orientation Dimensions

The specific dimensions of EO were introduced for the first time by Miller in 1983. He suggested that the entrepreneurial firm is one that “engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with ‘proactive’ innovation, beating competitors to the punch”. Accordingly, Miller identified the salient dimensions of EO as innovative, risk taking, and proactive. *Innovativeness* is the predisposition to engage in creativity and experimentation through the introduction of new products/services as well as technological leadership via R&D in new processes. *Risk taking* on the other hand involves taking bold actions by venturing into the unknown, borrowing heavily, and/or committing significant resources to ventures in uncertain environments. However, Wolff *et al.*, (2015) state that firm-level entrepreneurial characteristics are exhibited by a pioneering pattern of decision-making under uncertainty reflective of risk at a level greater than exhibited by a conservative, follower pattern. Whereas *pro-activeness* is an opportunity-seeking, forward-looking perspective characterized by the introduction of new products and services ahead of the competition and acting in anticipation of future demand (Miller, 1983).

Almost twenty years after Miller’s work, other researchers proposed adding two additional dimensions, that is, autonomy and competitive aggressiveness, to complement the three dimensions that he had introduced: innovative, risk taking and proactive. Drawing on Miller’s definition and prior research, researchers identified competitive aggressiveness and autonomy as additional components of the EO construct. *Competitive aggressiveness* is the intensity of a firm’s effort to outperform rivals and is characterized by a strong offensive posture or aggressive responses to competitive threats. *Autonomy* on the other hand refers to independent action

undertaken by entrepreneurial leaders or teams directed at bringing about a new venture and seeing it to fruition. (Miller 1983; Lumpkin & Dess 1996; Burgelman, 1984; Hart, 1992; MacMillan & Day, 1987; Venkatraman, 1989a).

A further argument is that, to be successful, a firm requires autonomy from strong leaders or creative individuals, without any restrictions from the firm's bureaucracy. The other dimension, competitive aggressiveness, describes Miller's idea of "beating competitors to the punch". It represents how a firm responds to threats and not only seizes opportunities as indicated by Miller's proactive dimension (Lumpkin & Dess 1996; Miller 1983). Opinion is divided among researchers about the extent of EO dimensions, which need to be present for a firm to be considered entrepreneurial. It is suggested that only firms that possess all three dimensions (that is, innovative, risk-taking, proactive) should be considered as entrepreneurial. In general, theorists would not call a firm entrepreneurial if it changed its technology or product line ('innovated' according to our terminology) simply by directly imitating competitors while refusing to take any risks. Some pro-activeness would be essential as well. By the same token, risk-taking firms that are highly levered financially are not necessarily considered entrepreneurial. They must also engage in product-market or technological innovation. In other words, several scholars emphasised that the EO dimensions are best viewed as a unidimensional concept (Miller 1983; Covin & Slevin 1991).

Although, there has been some debate in the literature concerning the dimensionality of EO, some scholars have argued that the entrepreneurial orientation construct is best viewed as a unidimensional concept and, consequently, the different dimensions of EO should relate to performance in similar ways. Some theorizing suggests that the dimensions of EO may occur in different combinations, each representing a different and independent aspect of the multidimensional concept of EO. As a consequence,

the dimensions of EO may relate differently to firm performance (Stetz, *et al.*, 2000; Covin & Slevin, 1989; Knight, 1997; Lumpkin & Dess, 2001; Covin *et al.*, 2006; George, 2006).

Specifically referring to the dimensionality of EO, it is noted that “intellectual advancement pertaining to EO will likely occur as a function of how clearly and completely scholars can delineate the pros and cons of alternative conceptualizations of the EO construct and the conditions under which the alternative conceptualizations may be appropriate.” While different conceptual arguments can be used for and against treating EO as a unidimensional or multidimensional construct, meta-analysis can establish empirically whether the different dimensions of EO relate to performance to the same or varying extent. On the other hand, it was argued that any firms which engage in an effective combination of autonomy, innovativeness, risk taking, pro-activeness, and competitive aggressiveness can be considered as entrepreneurial. This suggests that to become an entrepreneurial firm, it is not necessary for all five dimensions to co-exist (Chow, 2006; Covin *et al.*, 2006; Lumpkin & Dess 1996).

As a multidimensional concept, the effect of each dimension of EO on firm performance can be observed independently. It is suggested that the value of each dimension can vary independently and might not be the same at different stages of firm development. Furthermore, in examining the entrepreneurial process, it is beneficial to identify the unique contributions of each sub dimension of EO such that firms could seek the best combination to improve firm performance. Studies conducted by some researchers supported Lumpkin and Dess’ argument. These studies implied that some dimensions of EO are responsible for improving firm

performance, while other dimensions may have little or even no influence at all. This suggests that the effect of EO dimensions on firm performance varies, possibly depending on different industry context, business environment or stages in a firm's development. (Lumpkin & Dess, 1996; Lumpkin & Dess, 2001; Kreiser *et al.*, 2002; Rauch *et al.*, 2005; Coulthard, 2007; Hughes & Morgan, 2007). This study will use the concept of multidimensional entrepreneurial orientation based on its five elements: risk taking, proactivity, innovation, competitive aggressiveness and autonomy.

2.3.2 Performance Outcomes of Entrepreneurial Orientation

Entrepreneurial orientation is a firm strategic posture which enables firms to innovate, take risky activities and be proactive. In the contemporary business environment, which is characterized by constant changes and shortened product lifecycles, the future sources of revenue are uncertain and organizations need to constantly search for new opportunities on the market and maintain their competitive advantage. Entrepreneurial orientation let firms to create and commercialize ideas into new products and services, be involved in risky projects, apply forward-looking perspective and seek for new business opportunities. These characteristics of entrepreneurial firm may be beneficial when the firm is facing different environmental challenges. Therefore, firms may benefit from adopting entrepreneurial orientation to their strategy. Most of empirical studies are related to the investigation of EO influence on firm performance. In this case EO is considered as an independent variable which influences firm performance. EO may influence the performance in both direct and indirect ways. The studies of the direct influence investigate "EO-performance" relationship in different contexts, using moderating variables, whereas

studies of indirect relationships use mediating variables through which they connect EO with firm performance (Covin & Slevin 1989; Rauch *et al.*, 2009).

2.4 The Concept of Networking

2.4.1 The Concept of Networks

An entrepreneur's network can be defined as the sum total of his or her relationships and that it involves all the connections that a person has with other people. In addition, it is suggested that entrepreneurial networks could be categorized as either formal (for example: external accountants) or informal (for example: family and friends). Further, networking could be understood in terms of range (the number of different networks owners are involved with) and intensity (the frequency with which owners access those networks). (Gartner & Bellamy, 2009; Littunen, 2000; Zhao & Aram, 1995).

Similarly, networks can be defined as consisting of a set of actors (nodes) and a set of relationships (links) connecting these actors. Further, a network consists of single nodes (actors) and connections between these nodes (dyads), which as a whole form the structure of a network. Other scholars have stated that, "a network consists of interconnected dyadic relationships where the nodes may be roles, individuals or organizations". In addition, a network can be referred to as patterned relationships between actors such as individuals, groups or organizations. While the need for trust is implied in this definition, it is not specifically stated (Hoang & Antoncic 2003; Walker 1988; Johannisson 2000; Aldrich & Zimmer 1986; Ireland *et al.*, 2001).

Many authors distinguish between informal and formal networks. Others use the term "business" network, which seems to be nearly synonymous with "formal" network. While others state that the term network may include strategic alliances, joint

ventures, licensing agreements, and even joint marketing agreements. Nevertheless, virtually all definitions of the term indicate a group which provides direct interaction between individual actors coupled with some level of trust. Moreover, networks can be divided into two groups based on their types of ties, that is, weak ties and strong ties. Networks that primarily consist of arm's length relations are diverse and lack social cohesion; whereas networks that consist of embedded relations are cohesive and facilitate repeated social and business interactions. In addition, a cohesive network comprises members who are strongly and nearly exclusively connected to one another (Dollinger 2003; Aldrich & Zimmer 1986; Groen, 2005; Martinez & Aldrich 2011).

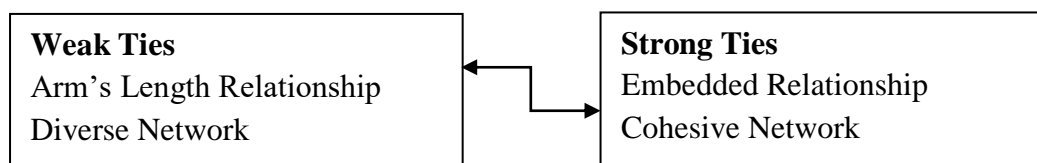


Figure 2.1: Summary of Different Types of Ties

Source: Martinez & Aldrich 2011

The success of a company depends on its collaboration with other organisations that influence the creation and delivery of its products or services. The building process of networks is uncertain and involves socio-psychological aspects. Networks of SMEs are especially based on personal relationships, where the small companies' networks overlap with entrepreneurs' networks. A challenge for SMEs is to use networks in a proper way and to profit from organisations within these networks. (Valkokari & Helander, 2007; Biggiere, 2001). Further, other scholars break the network dimensions' concept in two: the range and the intensity. Range refers to the differences among the contacts within a focal actor's network. It may also be viewed as the degree of diversity contained in a network. The intensity refers to the extent of

the interacting organizations' resources committed to the relationship in terms of the frequency of contact and amount of resources exchanged (Burt 1992; Zhao & Aram 1995).

2.4.2 Networking Capability in Firms

In today's business environment with a lot of uncertainties, firms are building networking relationships with other firms and this has recently gained momentum in strategic practice (Yang *et al.*, 2018). Networking capability is believed to have its origins in dynamic capability theory (Teece *et al.*, 1997) and relational views (Dyer & Singh 1998). Researchers have acknowledged the many benefits that can accrue to a firm by harnessing networking capability including; organisations being able to maximise the opportunity to leverage strategic network resources from network partners, making it possible for them to integrate and optimise various expertise, capabilities and knowledge that are considered strategic for the organisations (Mu *et al.*, 2016). In addition inter-firm partnerships enable firms to deal with the increasing complexity of technological dynamics (Hoang & Rothaermel, 2010).

This study defines networking capability as the competency of a firm to purposefully search and find network partners, and manage and leverage network relationships for value creation (Mu & Di Benedetto, 2012). Previous literature suggests that networking capability is a composite capability of finding networking partners and managing and leveraging networking relationships (Mu & Di Benedetto, 2012; Mu *et al.*, 2016). However, the current study reconceptualises the indicators of the "finding networking partners" dimension by adding a "partners to count on in time" indicator and adds "a resource sharing support" indicator to the "leveraging network relationships" dimension.

Networking is one tool that can be utilised by firms to improve their performance and it can be defined as a firm, its employees or owner linking with individuals or firms not under its direct control to share contacts, information and resources in a cost effective way. The objective of networking is therefore to gain a competitive advantage by extending resource availability beyond the assets under direct control of the entrepreneur. Networking further can be described as the process of enlarging the entrepreneur's circle of trust and a function of the negotiation process. Networking can in addition be defined as the activities in which the entrepreneurially oriented firms build and manage personal relationships with particular individuals in their environment (Carson *et al.*, 1995; Premaratne 2002; Sawyerr *et al.*, 2003; Kuratko & Welsh 2004; Dollinger 2003).

Many firms cooperate beyond their individual scope with other organisations, large and small, to exploit new technologies in networks. This is considered to be entrepreneurial networking, and it is suggested that networking can provide value to members by allowing them access to the social resources embedded within a network; that is, networking can provide the means by which manufacturing firms can tap needed resources that are 'external' to the firm. The entrepreneur plays a crucial role in building both formal and informal relationships with people within their society who are, or may become, material in assisting them to progress the growth ambitions of their enterprise. Such networks are an intangible asset. (Groen, 2005; Florin *et al.*, 2003; Jarillo, 1989; Hill *et al.*, 1999).

Another specific characteristic of entrepreneurial networking is that entrepreneurs will, themselves, operate as actors in the network and will often be involved in the execution of project activities. The more networking activities an entrepreneur engages in, the larger his personal network and the more central his position in it

should be. However, some entrepreneurs have no aspirations to create growing companies, so they may purposefully restrict their network size and their networking activities. The network could be characterised by many attributes. Witt (2004) analysed three groups of network characteristics: namely, (1) activities to build networks, (2) structure of network, and (3) acquired information by network partners, (During & Oakey, 1998; Witt, 2004; Chell & Baines, 2000). This is depicted in Figure 2.2.

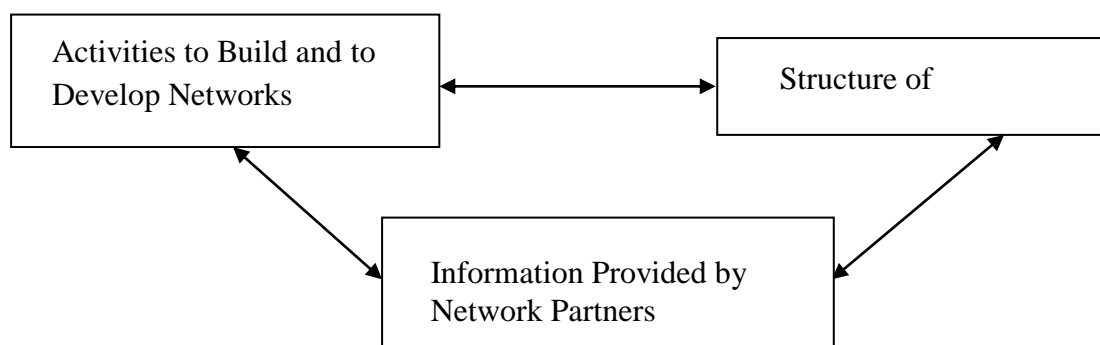


Figure 2.2: Attributes of Entrepreneurial Networking

Source: Witt, 2004

A number of different items have been suggested in the reviewed literature to measure networking activities. One of the proposals is to state the amount of time an entrepreneur invests in a defined period on the creation, preservation, and enlargement of his/her personal network. Another suggestion is to measure the frequency of communication between the entrepreneur and network partners during a defined time. Also the structure of network could be measured by different items, such as the size of an entrepreneur's personal network and the heterogeneity of network contributors or their diversity (such as different groups of people-family, friends, and business partners). Another structural measure is the density of network which means the number of direct relations between the entrepreneur's personal

network partners. The third attribute of the network characteristics is the output of the network, which consists of benefits attained through entrepreneurial networking activities. The benefits could be measured by frequency of new information provided by other contributors in the network or by their supportive actions (Witt, 2004; Hansen, 1995; Ostgaard & Birley, 1996).

There is no concrete measure of networking. However, following approaches by others, networking can be measured through a series of questions based on the networks respondents participate in. These sources of networks can range from general networks (membership in professional associations; attendance of trade fairs; use of accountants). Managerial networks; relationships with suppliers, competitors and customers. Social networks; relationships with friends and family and membership in social clubs (Lechner *et al.*, 2006; Premaratne 2002; Watson 2011).

Networking in firms varies in different dimensions that could be classified into (1) level of networking, (2) strength of network ties, and (3) networking proactivity on the continuum. The level of networking refers to the range of the network and it should be positively connected to the companies' ownership. Therefore, the level of networking in which an owner-entrepreneur engages, could be positioned on a continuum from "limited" to "extensive", where "limited" refers to a small network with some connections, and "extensive" refers to a network with many connections. The strength of network ties is defined as a combination of time, emotions, intimacy, level of maturity, degree of trust, and previous experiences between actors. Strong ties are relations that an entrepreneur can "count on", and weak ties as relations in which people typically have little emotional investment. Therefore, the strength of tie between an entrepreneur and a network participant can be positioned along a

continuum from “weak” to “strong”. (O’Donnell, 2004; Birley *et al.*, 1991; Burns & Dewhurst, 1996; Johannisson, 1986; Dubini & Aldrich, 1991).

On the other hand, the degree of networking proactivity is related to the entrepreneur, and partly to other actors involved in a particular network. Some studies have further shown that entrepreneurs are aware of the benefits that a particular network has for their companies. The level of networking proactivity could be on a continuum from “reactive” to “proactive”. The main limitation of network research arises from the fact that empirical studies must use quantitative measures to estimate qualitative information. The problem further applies to data collection as well as data evaluation. Researchers further indicate that an individual entrepreneur or a new venture forms relations both with other individuals and organizations. Therefore it can be concluded that relations are formed at the level of both interpersonal and inter-organizational ties (Shaw, 1999; O’Donnell, 2004; Daft & Lengel, 1986; Hoang & Antoncic, 2003; Slott-Kock & Coviello, 2010).

From the resource based perspective, entrepreneurs establish relations in order to access resources that they otherwise lack. Thus, networking is seen as a goal oriented process, with the networking goal being determined by venture needs, strategy and performance. In addition, according to several scholars, the process studies on entrepreneurial networks mainly follow the life cycle theory and regard networking as a sequence of stages or events (Slott-Kock, 2009; Slott-Kock & Coviello, 2010).

Researchers argue that “successful entrepreneurial environments are characterized by thriving supportive networks that provide the institutional fabric; linking individual entrepreneurs to organized sources of learning and resources”. Hence, individual social networking and inter-competitive advantage, as they may constrain or facilitate

resource acquisition and the identification of opportunities. The individual social networking construct represents These friends, and acquaintances; and entrepreneurial advocates (Audretsch & Thurik, 2004; Saxenian, 1994; Beckert, 2010; Aldrich & Zimmer, 1986).

The aim of those networking activities has been found to provide assistance to entrepreneurs in the form of expert opinions and counseling, shared experiences and role models, information and resources, and support and motivation. Additionally, inter-organizational networking consists of formal and/or informal collaborative networking activities among entrepreneurial advocates at the public, private, and civic levels that may facilitate the entrepreneurial process from an idea generating stage, to a development stage, and later to a strategic positioning one. Those collaborative network activities may include alliances to improve entrepreneurial mechanisms (Audretsch & Thurik, 2004; Manning *et al.*, 1989; Butler & Hansen, 1991; Dubini & Aldrich, 1991; Uzzi, 1996).

2.4.3 Networking Relationships

Because the network approach in Entrepreneurship builds upon Social and Business network theories, which implies both an individual and an organization as a unit of analysis, then focal agent of entrepreneurial networking activities is represented by an entrepreneur, or his or her firm. The dominating egocentric view of entrepreneurial relations sees networking as a process spreading outwards from the entrepreneur or a venture towards other actors. An individual entrepreneur or a new venture forms relations both with other individuals and organizations. Therefore, it can be concluded that relations are formed at the level of both interpersonal and inter-organizational ties (Slotte-Kock & Coviello 2010; Slotte-Kock 2009; Hoang & Antoncic 2003).

2.5 The Concept of Transformational Leadership

Transformational leadership adopts an effective combination of holistic and individualistic approaches to meet the collective goals and ambitions of a group, as well as to appraise the follower's motivation (Boberg & Bourgeois 2016; Cheng & Sheu 2017; Muralidharan & Pathak 2018). Moreover, transformational leadership is identified by its ability to bring about significant changes in the organization's strategy, vision, attitude, and culture while advancing creativity and innovation in products, services, and technologies (Chen 2017; Choi *et al.*, 2016).

Transformational leadership (TL) can thus be defined as the style of leadership that can engage the organization's employees and encourage them to achieve the firm's targets. In addition, transformational leaders can be used to promote better performance by motivating individuals to collaborate in the pursuit of the firm's higher-level objectives (Sun *et al.*, 2014). Meta analytic researches further indicate that transformational leaders are influential on outcomes at both the team level and the firm level (Lin *et al.*, 2016).

Additionally, Bass (1985) extended the work of Burns (1978) and introduced transformational leadership theory. Transformational leadership influences individuals (employees/followers) to attain organizational goals (Hill *et al.*, 2012). Transformational leadership has five elements: idealized influence (behaviour), idealized influence (attributed), inspirational motivation, intellectual stimulation, and individual consideration. Idealized influence (behaviour) can be defined as transformational leaders who display behaviours that enable them to be role models for their followers. Furthermore, these leaders ought to show sincerity and respect, and to infuse passion and self-importance (Bass 1985). Idealized influence (attributed) defines the sense of loyalty, admiration, trust, and respect that followers attribute to

these leaders (Puffer and McCarthy 2008). Inspirational motivation refers to the fact that transformational leaders set high expectations on employees and employ imagery and signs to emphasize struggle and communicate the significance of organizational goals (Hoffman *et al.*, 2011). Intellectual stimulation relates to the aptitude of leaders for the development of an environment that is suitable for creativity and innovation, including the empowerment of followers or employees to solve difficult issues. Finally, individualized consideration states that leaders pay attention to the needs and requirements of individual followers or employees and assist them with their self-actualization and growth. This study will employ all elements to measure transformational leadership.

2.6 Theoretical Perspectives

2.6.1 The Resource Based View (RBV) Theory

This was the main theory guiding this study and it stipulates that, the pursuit of competitive advantage is indeed an idea that is at the heart of much of the strategic management literature (Barney, 2007; Porter & Kramer, 2006; Liao & Hu, 2007). Understanding sources of sustained competitive advantage has become a major area of study in strategic management (Porter, 1985; Barney, 1991; King, 2007b). The Resource-Based View stipulates that in strategic management the fundamental sources and drivers to firms' competitive advantage and superior performance are mainly associated with the attributes of their resources and capabilities which are valuable and costly-to-copy.

Building on the assumptions that strategic resources are heterogeneously distributed across firms and that these differences are stable overtime, Barney, (1991) examines the link between firm resources and sustained competitive advantage. Four empirical indicators of the potential of firm resources to generate sustained competitive

advantage can be value, rareness, inimitability, and non-substitutability. In Barney (1991), firm resources include all assets, capabilities, organizational processes, firm attributes, information and knowledge controlled by a firm that enable the firm to conceive and implement strategies that improve its efficiency and effectiveness. Barney (1991) further argued that to have the potential to generate competitive advantage, a firm resource must have four attributes: (a) it must be valuable, in the sense that it exploits opportunities and/or neutralizes threats in a firm's environment; (b) it must be rare among a firm's current and potential competition; (c) it must be imperfectly imitable; and (d) there cannot be strategically equivalent substitutes for this resource. This conceptual notion can best be displayed as per Figure 2.5.

Entrepreneurship researchers' further attempt to explain firm performance by investigating firm's entrepreneurial orientation (Zahra & Covin 1995). Entrepreneurial orientation is seen as part of managerial processes that includes the orientation of a firm's strategy; and capturing specific entrepreneurial aspects of decision-making styles, methods and practices in order to be constantly ahead of the competitors (Lumpkin & Dess 1996). Based on the resource-based view (RBV) theory, networking is a capability thus a valuable resource because it has unique characteristics and is difficult to imitate (Barney, 1991). Hence, this study proposes that networking mediates the relationship between EO and performance. Since EO provides basic elements for achieving benefits in the relationship, networking can enhance it so as to achieve better and improved firm performance.

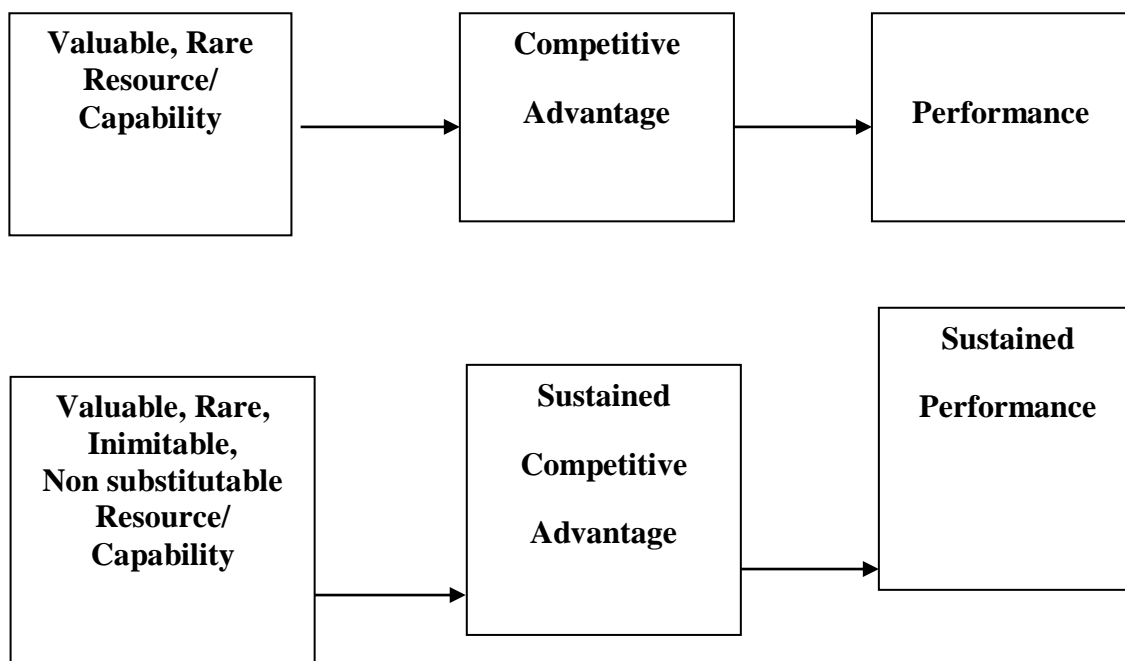


Figure 2.3: Barney's (1991) Conceptual Model (Newbert, 2007)

2.6.2 Dynamic Capability theory and Relational theory

These two theories informed the mediating variable which was networking capability in this study, and supported by the social capital theory. Dynamic capability theory suggests that an organisation should develop the capability to adapt, consolidate renew and reconfigure resources to gain the advantage of seizing and capitalising opportunities produced by the changing business environment (Teece *et al.*, 1997). The resource configuration should come not only from the internal interface mechanism but also from the external interface embedded in business partners (Teece *et al.*, 1997). Relational theory on the other hand argues that networking capability assists organisations in acquiring and exploiting critical resources that span organisational boundaries for product development that aligns with customers and the market's needs (Dyer & Singh, 1998).

2.6.3 Social Capital Theory

Social capital theory postulates that networking relationships provide value to actors (for example, individuals, organizations, or communities) by allowing them to tap into the resources embedded in such relationships for their benefit (Bourdieu, 1986; Lin, 2001). Social capital is defined as the sum of resources, actual or virtual, that accrue to an individual or an organization as a result of the development of personal and social networking relationships (Bourdieu & Wacquant, 1992; Lin, 2001). Although early usage of the concept of social capital focused on how the resources acquired by an individual through the development of close social relationships and networks influences his/her behaviour (a micro–micro link), the argument has been extended to organizations (a micro–macro link) (for example, Baker, 1990; Gulati, 1995). The top managers of an organization can develop social capital through a variety of personal, social, and economic relationships with their constituencies that can be used for the benefit of their organizations. These include the managers' personal and social relationships with suppliers, customers, competitors, trade or employee associations, government's political and bureaucratic institutions, and community organizations and institutions.

2.6.4 Transformational Leadership Theory

This theory informed the moderating variable which was transformational leadership in this study. Transformational Leadership theory (TFL) has been viewed as one of the main leadership theories that are used to facilitate organizational outcomes in competitive environment (Singh & Naqshbandi, 2015). The TFL theory emphasizes the role of transformational leaders in motivating their employees to exceed expectations, improving performance across all levels of the organization (Wang *et al.*, 2011). According to Bass (1985), transformational leaders encourage their

employees to perform at a higher level by demonstrating four behavioural characteristics: idealized influence-subordinates respect and admire charismatic leaders; inspirational motivation-leaders motivate employees by sharing their vision for the company/unit; intellectual stimulation-leaders encourage and assist their subordinates to be innovative in their thinking and tackle problems in novel ways; and individual consideration- leaders show genuine concern about their subordinate's needs and pay attention to them. Previous studies have recognized a positive connection between TFL and employee performance by using cross-sectional surveys, and longitudinal, experimental, and multisource research designs (For instance, Judge & Piccolo, 2004; Liao & Chuang, 2007). Transformational leaders are effective because they can increase and assess followers' interest, create attentiveness, and produce benefits among followers. Most prominently, transformational leaders can inspire followers to achieve more than the expectation of the organization for the interests of the organization (Singh & Naqshbandi, 2015). Also, transformational theory is effective because they can help leaders to renovate the organizations when the leader can define the direction for variation, create new visions, and activate commitment to these visions (Singh & Naqshbandi, 2015).

2.6.5 Entrepreneurial Orientation theory

This theory unravels the independent variable which was entrepreneurial orientation in this study. At the firm level, the currently prevalent firm level EO was originally developed with the psychological claim to distinguish between managers and business owners and laments that it was abandoned in a still quasi-psychological stage before individual EO-success relationships were even investigated (Callaghan, 2009). According to Covin & Wales (2011) the theoretical foundation of EO research is traceable to Mintzberg (1973), Khandwalla (1976, 1977), Miller (1983) Covin &

Slevin (1989), Miller & Friesen (1982); and Lumpkin & Dess (1996). One of the strategy making modes put forth by Mintzberg (1973), is the entrepreneurial one which is based on active search for entrepreneurial opportunities and growth. The other modes include planning which is concerned with systematic information gathering for situational analysis, generation of alternate and selection of appropriate strategies; and the adaptive mode which focuses on reactive solutions than proactive search for new opportunities.

Support for the entrepreneurial mode is given by Khandwalla (1976/1977) who refer to entrepreneurial management style as consisting bold, risky and aggressive approach to decision-making in contrast to a more cautious stability-oriented approach. According to Miller (1983), an entrepreneurial firm is one that engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch. On their part, Covin & Slevin (1989) contrast firms operating in hostile competitive environments, characterized by intense rivalry among firms with firms that operate in more benign competitive settings and reported that the former tended to adopt innovations with greater frequency than the latter. Miller (1983) used the dimensions of innovativeness, risk taking and pro-activeness to characterize and test entrepreneurial orientation, while Lumpkin & Dess (1996) expanded the numbers of dimensions to include competitive aggressiveness and autonomy.

2.7 Empirical Studies

2.7.1 Entrepreneurial Orientation and Firm Performance

Autonomy refers to the ability to make decisions and to proceed with actions independently, without any restrictions from the organisation. It also reflects the strong desire of a person to have freedom in the development of an idea and in its

implementation. It was suggested that autonomy offered by firms would motivate employees to work in a positive manner that could lead to higher firm performance. From reviewing four prior studies on different industries in Australia, it was argued that firms cannot function entrepreneurially without giving autonomy to their employees. Some findings showed that autonomy is the most important factor for improving firm performance across industries. It is apparent that giving autonomy to all players in the organisation will motivate them to act entrepreneurially, and in turn improve firm performance (Coulthard, 2007; Lumpkin *et al.*, 2009; Lumpkin & Dess, 1996).

Innovativeness reflects a firm's ability to engage in new ideas and creative processes that may result in new products, markets, or technological process. Innovation can further be defined as "the generation, acceptance, and implementation of new ideas, processes, products, or services". Others believed that innovation is a crucial part of a strategy and that entrepreneurship cannot exist without it. However, by reviewing previous EO studies in four different industries within Australia, it was found that innovativeness is not the most significant dimension. Accordingly, innovativeness is related to creativity. Without creativity, there will be no force to be innovative. Creativity is a source of ideas that will lead to the innovation of products, services, processes, markets, or technology. Further, Mile (2010) shows that an innovation strategy is a positive and significant predictor of the performance of manufacturing firms. (Rauch *et al.*, 2009; Thompson cited in Calantone *et al.*, 2002; Covin & Miles, 1999; Coulthard, 2007; Landstrom, 2005).

On the other hand, other researchers found that most firms favour experimentation and original approaches to problem solving rather than initiating methods that other firms have used for solving their problem. Further these scholars found that most

firms lay a strong emphasis on product research and development, technological leadership and innovation. Other researchers found that Innovativeness displayed a predominantly positive U-shaped relationship with firm performance. According to these researchers, there appears to be a negative performance impact of innovativeness when shifting from low to moderate levels of innovativeness. The performance-related returns associated with innovativeness start to increase at moderate levels of innovativeness, which suggests that, in general, moderate-to-high levels of innovativeness are beneficial to firm performance (Kreiser *et al.*, 2013).

Kollmann & Stockman (2014) found a positive relationship between risk taking and performance of firms. Palmer, C. *et al.*, (2017) posit that risk taking is something for established firms to avoid. They found a positive relationship between risk taking and firm performance in their study. Risk-taking refers to a firm's willingness to take calculated business opportunities in the market place, even when their outcomes are uncertain. Firms, therefore, with risk taking behaviour of EO are described as firms that are bold and aggressive in pursuing opportunities, such as incurring heavy debt or making large resource commitments to obtain high returns by taking advantage of opportunities provided by the environment. In addition, firms with strong entrepreneurial behaviour are attracted to projects of higher level of risk to get higher level of return. On the contrary, a risk-averse firm will avoid doing something that provides uncertain yield to changing environment. This behaviour will result in weaker performance as the firm is not willing to capture market opportunities (Hughes & Morgan, 2007; Avlonitis & Salavou, 2007; Lumpkin & Dess, 1996; Lumpkin & Dess, 2001).

Pro-activeness can be described as "taking initiative by anticipating and pursuing new opportunities related to future demand and by participating in emerging markets".

Being a proactive firm is demonstrated by a firm's awareness and responsiveness to market signals. Accordingly, pro-activeness is "an opportunity-seeking, forward-looking perspective characterised by the introduction of new products and services ahead of the competitions and acting in anticipation of future demand". It was suggested that pro-activeness involves the identification and evaluation of new opportunities, and monitoring market trends. By conducting these activities, some studies discovered that proactive firms introduce new products in the market ahead of their competitors. However, others argued that pro-activeness is not always being the first mover in the market. A further argument is that, at the embryonic stage of firm growth, pro-activeness was a critical factor that affected firm performance improvement. The role of pro-activeness was less important once a firm was established. The words pro-activeness and competitive aggressiveness are often used interchangeably. However, some researchers distinguished between them, suggesting that pro-activeness reflects a firm's reaction to opportunities in the market place whereas competitive aggressiveness refers to a firm's response to a competitor's challenges (Lumpkin & Dess, 1996; Hughes & Morgan, 2007; Rauch, *et al.*, 2009; Kropp, *et al.*, 2008; Venkatraman, 1989a; Coulthard, 2007).

Competitive aggressiveness on the other hand refers to a firm's propensity to directly and intensely challenge its competitors to achieve entry or improve position, that is, to outperform industry rivals in the marketplace. These actions may be based on product innovations and/or market development. In order to surpass their industry rivals, firms can demonstrate responsive or reactive action. Responsiveness may take the form of head-to-head competition or direct attack on competitors, such as when a firm enters to the market where the competitor is already present. In contrast, reactive shows direct reaction to a competitor's action, for example where a firm cuts the price of its

product when a competitor introduces a new product to the chosen market (Lumpkin & Dess, 1996).

2.7.2 Entrepreneurial Orientation and Networking Capability

Past entrepreneurial studies have shown that firms can positively influence Entrepreneurial Orientation through their networking practices. Thus, to fully extract the capability to identify, create and exploit entrepreneurial opportunities, most firms benefit from joining networks and thus gaining advantages from external relationships. The effects of networking are widely studied and understood to positively affect entrepreneurial opportunities. Since it is time-consuming and difficult for firms to develop all the resources necessary to successfully commercialize a business idea alone, they normally rely on external contacts for accessing scarce and specialized resources that the firm needs in order to become established and to grow (Gaudici, 2013; Chathoth, 2002; Stam, 2010).

Further, Organizations that are more proactive excel in their identification of opportunities, generally take the initiative in seizing those opportunities, and generally tend to initiate more actions in their environment. They are more likely to identify possibilities for partnerships and initiate actions that actually facilitate collaboration. A greater ability and tendency to see collaborative opportunities should, over time, result in more actions seizing those opportunities. The more collaborative opportunities seized, the higher the likelihood that a firm will have a larger collaborative network size. Risk-taking is also likely to affect networking. (Hughes & Morgan, 2007).

2.7.3 Entrepreneurial Orientation, Networking Capability and Firm Performance

The relationship between EO and firm performance has become the central focus of interest for studying EO and to date, findings have been mixed. Numerous studies have showed that EO, directly or indirectly, has a positive relationship with firm performance (Young Min *et al.*, 2019). This means that firms that adopt more EO perform better than those with lack of such orientation. This association may be related to the fact that today's dynamic business environment causes product life cycles to become shorter and uncertainty to increase. In addition, the actions of competitors as well as customers are unpredictable. Firms, therefore, are required to conduct innovation regularly, anticipate demand, take into account the risk, and aggressively compete to maintain or find new positions in the marketplace. However, the way they do this may vary, according to their position in the industry (leader/follower). (Rauch *et al.*, 2005; Covin *et al.*, 2006; Wiklund & Shepherd, 2005; Li *et al.*, 2009; Zahra & Garvis, 2000; Hughes & Morgan, 2007).

The work carried out by some researchers is one of the studies that investigate the direct effect of each dimension of EO on performance. These researchers discovered that the contribution of each EO dimension to firm performance varies, and even some dimensions are found not correlated at all with firm performance. While several studies have suggested a positive relationship between unidimensional EO and firm performance (Rauch *et al.*, 2009), other studies have found a non-linear relationship (Tang *et al.*, 2008; Tang & Tang 2012). Further, some studies have assessed the effect of separate EO dimensions, and different types of effects are found for these dimensions (Hughes and Morgan, 2007; Kraus *et al.*, 2012; Lechner & Gudmundsson, 2014). The results from these studies consistently indicate that risk-taking has a

negative effect on firm performance, in contrast with the positive effect of innovativeness and proactiveness. These results confirm the idea that the different dimensions of EO should be considered separately.

Further, Terziovski (2010), also found a positive relationship between new product introductions and firm performance. Despite there being a positive relationship between innovativeness and firm performance as evidenced in these studies, there are also potential costs of innovativeness that are likely to be especially relevant in the manufacturing firm context (Rosenbusch *et al.*, 2011). For example, innovativeness requires a large a priori expenditure of organizational resources (Hornsby *et al.*, 2009) which can compromise the ability of firms to meet short-term financial obligation. In addition, giving autonomy to employees in a firm motivates them to behave in entrepreneurial manner which in turn aids in improving the firm's performance (Lumpkin *et al.*, 2009).

Consequently, other researchers, however, suggested that by investigating the direct effect of EO on firm performance, it will not provide a comprehensive description of the relationship. Therefore, most researchers have applied other variables to the model EO-firm performance. Consequently, Kreiser *et al.*, (2013) found positive relationships between innovativeness-performance and pro-activeness and performance, and a predominantly negative relationship between risk-taking and performance (Covin & Slevin, 1991; Hughes & Morgan 2007; Wang, 2008; Wiklund & Shepherd, 2005). As pointed out by Wang (2008), an important message from the findings in the literature on the EO-performance relationship is that simply investigating the direct effect of EO on firm performance does not provide a complete picture. Similarly, the empirical findings of EO-performance relationship studies were mixed. Researchers have revealed that there is no significant relationship

between Entrepreneurial Orientation (EO) and firm performance. Consequently, other researchers were unable to provide any evidence of a positive relationship between EO and profitability. Moreover, it was found out in one study that EO may not significantly increase the firm performance. (Covin, Slevin *et al.*, 1994; Slater & Narver, 2000; Lee *et al.*, 2001).

The study conducted by Kreiser *et al.*, 2013 adopted three dimensions of EO and they measured it using eight of the items from the original Covin & Slevin measure (1989). All the items in that study were measured using a five point likert scale. The results of that study suggest that three dimensions of EO display differential relationships with firm performance. Their results suggest predominantly positive relationships between innovativeness-performance and proactiveness-performance, and a predominantly negative relationship between risk-taking and performance. Another study by Tang & Tang 2012 investigated the relationship between entrepreneurial orientation and performance of commercial banks in Nigeria and the mediating effect of teamwork on the relationship. The results of the structural model used in that study revealed that entrepreneurial orientation and organizational performance were positively and significantly related.

The role of Networking on firm performance has equally been researched by several authors with studies indicating a positive relationship between networking and firm performance. Even though prior studies have acknowledged the potential benefits of networking capability, other researchers highlight the dark side of networking activities. Yang *et al.*, (2018) for instance noted that networking may cause an unbalanced outflow of firms' specific assets. On the other hand, the empirical study of 106 Chinese high-technology manufacturing firms by these researchers finds that networking capability increases performance growth.

Consequently, Randy, K. *et al.*, (2020) posit that networking capability benefits outperform its dark sides and that networking capability contributes to firm performance. It is further argued that the positive impact of networking on firm performance stems from the information and resource sharing which are mutually beneficial. With these documented benefits of networking, it becomes necessary to investigate factors that affect networking by firms. Research establishes that necessity, reciprocity, efficiency and stability are some factors that influence networking of firms. This suggests there are many factors affecting manufacturing firm networking and an exhaustive investigation of all these factors is not feasible (Hakansson & Ford, 2002; Chen *et al.*, 2007; Bandiera *et al.*, 2008; Eisingerich & Bell 2008; Thrikawala 2011; Sawyerr *et al.*, 2003; Farinda *et al.*, 2009).

Firms exert their network partnership to offset the weakness of firms, reduce transaction costs and risks, and exchange knowledge and capability. Hence, networking is an important determinant of firm performance. Research on business networks to date has focused on the antecedents of network formation and relational content among firms rather than outcomes of such relationships and networks. In addition, it is noted that although the arguments in favour of networking appear compelling and most of the existing literature is premised on the belief that networking is beneficial, there is little empirical evidence to date of an association between firm performance and the owner's use of networks by firms (Cao & Zhang, 2011; Lechner *et al.*, 2006; Kapasuwan, 2006; Haves & Senneseth, 2001).

Accordingly, by examining the network relationships in which they are embedded, the performance of firms can be more fully understood. Networking ultimately leads to superior firm performance. On the other hand, other researchers failed to show any significant relationship between the use of professional advisors and firm survival. A

further investigation of this relationship was carried out by some researchers who examined the relationship between networking and firm performance of established firms in Australia. As firm performance measurement, he used survival, growth and ROE. In his study, they found that networking was positively related with firm survival, and to a lesser extent, growth. Yet, they were unable to find a significant relationship between networking and ROE (Gulati, *et al.*, 2000; Andreosso & Lenihan, 2008; Cooper, *et al.*, 1994; Watson 2007).

Another interesting finding was that formal and informal networks were both associated with firm survival, but only formal networks were associated with growth. In addition, neither formal nor informal networks were associated with ROE. Further, it was posited that there is an urgent need for academic research to systematically investigate the effects of networks on firm performance. Likewise, after reviewing international management research in top management journal, it was found that the impact of foreign partners on firm performance is a potential research area not frequently addressed. On the other hand, empirical literature on the impact of networking on the performance of firms has produced mixed results. Other studies find a significant positive relationship between a firm's engagement in various networks and their performance. On the contrary, others found a negative association between networking and performance (Gulati *et al.*, 2000; Thrikawala, 2011).

Literature further reveals that there are studies conducted in relation to networking dimensions and firm performance. One study was conducted on "strategic networking and growth of Technology oriented firms: Evidence from Singapore" which targeted 112 technology-oriented firms in Singapore in relation to the role played by strategic networks and alliances in their development and growth. The findings found that firm's growth is independent of network range but predicted by intensity (Seck &

Mazzarol 2006). In addition, firms that emphasize on building business networks increase flexibility and efficiency, access network resources at minimal transaction cost, operate under reduced business risk, and eventually their performance is high (Dyer & Nabeoka, 2000; Lorenzi & Baden-Fuller, 1995; Casson & Cox, 1993; Gulati *et al.*, 2000). On the other hand, networking with channel members provides more access to market intelligence, reduced cost, opportunistic behaviour and a look for better value for delivery to their end customers, which in turn enables firms to have a competitive advantage in the market. Consequently, firms having access to market intelligence respond to customer's needs (Palmatier, 2008), satisfy or anticipate needs and wants, thereby creating value or facilitating the adoption of new products and enable firms to adopt a proactive behaviour.

Network range refers to the variety and number of connections. In this regard the broader the external network is the easier it is to have access to resources. The core strategy of the firm is to get resources needed at the lowest cost and that a social network plays an important role in capturing these resources. It is noted that the network has the benefit of reducing the uncertainty of innovation. In addition, through the networks there is enhanced communication and exchange of resources, hence speeding up the transfer of knowledge and technology. When this is achieved there is likelihood that performance is enhanced (Burt, 1992; Elfring & Hulsink, 2003; Dess & Starr 1992; Larson, 1991).

Network intensity is the combination of time, mutual trust and reciprocal services. It is argued that the closer the relationship among members, the faster the speed of sharing resources. Further, the more familiar contacts are, the more trustworthy the members become, and this reduces unethical behaviour and encourages exchange amongst group members. Through use of networks firms are capable of locating

resources and hence the acquisition can be enhanced through mutual trust. Mutual trust therefore can get members together hence contributing to firm's performance (Granovetter, 1973; Ahuja, 2000; Gulati, 1995; Uzzi, 1996).

Network is considered as one of the most powerful assets since it provides access to power, information, knowledge, technologies, and capital. Based on the nature and source of the relationships, networks can be distinguished into two broad categories, namely (1) personal networks or informal networks and (2) business networks or organisational networks. The former refers to informal relationships that involve relatives, friends, and acquaintances. The latter is concerned with relationships between actors that control business activities, such as customers, distributors, suppliers, competitors, and government (Forsgren & Johanson, 1992; Elfring & Hulsink, 2003; Inkpen & Tsang, 2005; Sawyer *et al.*, 2003; Shaw, 2006; Wright & Dana, 2003; Premaratne, 2001). It was suggested that personal networks may provide firms with a higher and more stable flow of information and advice. Similarly, it was discovered that firms in Scotland rely more on informal rather than formal sources to acquire information and advice. On the other hand, it was found that entrepreneurs in Bulgaria and the Philippines utilise business networks to gain access to capital and business training (Premaratne, 2001; Butler, *et al.*, 2003; Shaw, 2006).

By now, it is evident from the above discussion that both EO and networking capability enhance firm performance. This study further proposes that EO enhances firm performance through its effect on networking capability. Firms with high levels of EO tend to perform better and experience more sales and profit performance (Bereket, 2017). They are more alert and prepared for opportunity recognition (Johanson & Vahlne, 2009). As EO prompts firms to be more risk-taking and open in their relationships, high EO firms are eager to join related networks so as to gain

better access to complementary resources and knowledge, build mutual trust and develop commitment between partners, which in turn will help them pursue more opportunities locally and even across borders. As posited by Johanson & Vahlne (2009), ‘opportunities are likely to emerge as a consequence of the privileged knowledge that two partners develop during their interaction’. Since firms suffer from liabilities of newness and smallness (Aldrich & Auster, 1986) and limited resources (Tang *et al.*, 2017), firms with higher EO will be better able to overcome their liabilities and compete successfully through developing the related networks and strengthening their position in networks.

2.7.4 Entrepreneurial Orientation, Transformational Leadership and Firm Performance

Entrepreneurial orientation (EO) as an essential strategic entrepreneurship strategy will require effective implementation through transformational leadership (TL). The individual effect of EO and TL on firm performance have empirically shown positive relationships respectively. Several authors have found that EO has an impact on firm performance even in emerging markets (Palmer, C. *et al.*, 2017; Gruber-Muecke & Hofer 2015; Boso *et al.*, 2013). Lumpkin & Dess (1996) described EO as “the process, practice and decision-making that leads to new entry”. These functions are traditionally part of the management’s responsibility as part of setting the strategic direction for the organisation. Transformational leaders reinforce follower’s awareness in realising the importance of reaching organisational goals by clearly articulating the organisation’s shared mission and strategic direction (Bass & Bass, 2008).

Studies addressing the TL as a moderator in the relationship between EO-and firm performance are sparse. However, organisations led by transformational leaders have

been found to be more likely to adopt an entrepreneurial strategy (Ling, *et al.*, 2008). Engelen *et al.*, (2013) researched the moderating effect of six TL behaviours on the EO-performance relationship. This study considered six factors of TL moderating the EO-performance relationship. The study by Yang (2008), confirmed that all leadership styles will moderate the relationship between EO and firm performance, with TL being the most significant. Both studies showed a significant increase in performance with TL in the former being applied as a moderating variable and in the latter as an independent variable.

2.7.5 The moderating role of Transformational Leadership

Consequently, the incorporation of top management's leadership behaviors as a moderator of the EO-performance relationship is guided by two major theoretical perspectives: First, the resource based view (Barney, 1991) suggests that intangible resources interact with strategic posture to produce superior firm performance (Newbert, 2007). In particular, intangible resources, including capabilities like transformational leadership (Panagopoulos & Avlonitis, 2010), are useful in increasing the positive returns that are associated with firm strategy (Govindarajan, 1989). Transformational leadership behaviors are characterized by a complex and intangible net of relationships in firms, which is difficult for outsiders to observe and imitate (Panagopoulos & Avlonitis, 2010). The second major theoretical perspective that guides the integration of EO and top management's leadership behaviors, upper echelons theory (Daily *et al.*, 2002; Hambrick & Mason, 1984), argues that top management can play an important role in fostering change in the organization and in the minds of employees.

2.7.6 Control Variables

This study controlled for firm size and firm age. These variables were collected through the use of questionnaires. Larger firms may have more resources to develop an EO, hence firm size was measured by the total assets. On the other hand, older firms may suffer from inertia, inhibiting an entrepreneurial approach. Controls were therefore included by firm age (in years) and firm size (number of employees) as typical controls for manufacturing firms (Stam & Elfring 2008). The choice of these variables was grounded on their traditionally acknowledged influence on EO and firm performance (Lumpkin & Dess, 1996; Wales *et al.*, 2013). Firm age was measured according to the number of yearly periods of activity since establishment (Luo, Zhou, & Liu, 2005; Etchebarne, Geldres, & Garcia-Cruz, 2010). Firm size may influence firm EO (Luo *et al.*, 2005; Real, Roldan, & Leal, 2014), and was measured by the number of employees.

2.8 Summary of Knowledge Gaps

Authors	Problems/research questions	Methodology	Findings	Conclusion	Gaps
Young, M. <i>et al.</i> , 2019	This study investigated the impact of organization behavior variables on the EO – firm performance relationship.	This paper was based on the structural model which was tested using primary data from 321 South Korean industrial firms.	Findings indicated that EO is positively related to firm performance and that adaptive organizational culture and people-centered management have a multiple mediating effect on the relationship between EO and firm performance.	The study suggested that EO influences firm performance at least partially through AOC and PCM.	The study utilized SEM for analysis whereas this current study embraced model 59 for moderated mediation. The study also used AOC and PCM as mediators in the EO-performance relationship, this current study used networking capability as the mediator
Thanos <i>et al.</i> , 2017	This article investigated the relationship between international entrepreneurial orientation (IEO) and international performance taking into account the moderating effects of politicization in internationalization decisions and international hostility	The article was based on a survey of 208 Greek international small and medium-sized enterprises (SMEs) and used hierarchical moderated regression analysis to test its hypotheses	The study found that IEO is positively related to international performance. We also found that neither politicization nor international hostility separately has any moderating effects on this relationship. However, the findings support the view that the combination of high levels of politicization and international hostility critically diminishes the effects of IEO on international performance	The study concluded that SME managers can enhance their international performance by exhibiting IEO. International performance is driven by the actions that managers take in relation to adopting IEO.	The study looked at IEO and found it had an effect on IP. This current study looked at EO from local perspective.
Wee Loong Lee <i>et al.</i> , 2018	The purpose of this paper was to examine the effects of entrepreneur orientation (EO) on firm performance of the Malaysian manufacturing sector.	Data for the study was collected through a survey of 321 companies registered with the Federation of Malaysian Manufacturers. Responses were analyzed using PLS-SEM to assess the relationships between EO and firm performance	The findings showed that amongst Malaysian manufacturers, EO has a strong direct effect on firm performance.	The study concluded that EO enhanced performance among the Malaysian manufacturing sector	The current study adopted a different methodological approach as compared to this study

Wee <i>et al.</i> , 2018	The study purposed to identify the impact of factors (entrepreneurial orientation, information acquisition, and information utilization) on firm performance of Small Medium Enterprises (SMEs), in Malaysia.	A quantitative method was adopted in this study and responses from 150 respondents were chosen from the population's list of SMEs in Malaysia. Regression analysis was conducted to test the hypothesis of study and establish the causal effect of entrepreneurial orientation, information acquisition, and information utilization towards firm performance of SMEs.	The findings showed that only two factors (information acquisition and information utilization) influence firm performance while entrepreneurial orientation was not found to relate with firm performance	The researcher found that information utilization was the most influential factor on firm performance of SMEs. The researcher suggests that SMEs should strengthen the effective marketing strategy or formulation of their business. Besides that, the study concluded that to improve and acquire information of SMEs, they should be creative and innovative. The study recommended that future study should increase their sample size	This study found that EO does not influence firm performance whereas the current study found that EO affects firm performance. Additionally, this study utilized a small sample size whereas the current study used a larger sample size
Hassan, S. <i>et al.</i> , 2016	The purpose of this paper was to examine the joint effect of entrepreneurial orientation (EO) and total quality management (TQM) on the organizational performance. In addition, the study aimed to examine the ability of TQM to transmit the effect of EO on the organizational performance.	To examine the hypothesized model of the study, the survey questionnaire research design was employed. The data were collected from Dubai police department. The total number of questionnaires distributed were 320 out of which only 111 usable questionnaires were returned. The structural equation modeling partial least squares approach was used. Findings	The statistical results for the study confirmed the effect of EO and TQM on the organizational performance. In addition, TQM was found to partially mediate the effect of EO on organizational performance.	The results of the study purposed to help managers to make the proper decisions when deciding to implement TQM in their organizations. From the study TQM can help managers with strong EO to achieve maximum performance in organizations and to remain competitive in the market.	This study used TQM as the mediator in the EO-performance relationship whereas the current study utilized networking capability as the mediator.

2.9 The Conceptual Framework

The conceptual framework for this study was based on the Resource Based View theory (Barney 1991), Dynamic capability & relational view theory, Social Capital theory, transformational leadership theory and the entrepreneurial orientation theory whereby the theoretical foundation of EO research is traceable to Mintzberg (1973), Khandwalla (1976, 1977), Miller (1983) Covin & Slevin (1989), Miller & Friesen (1982); and Lumpkin & Dess (1996). Miller (1983) used the dimensions of innovativeness, risk taking and pro-activeness to characterize and test entrepreneurial orientation, while Lumpkin & Dess (1996) expanded the numbers of dimensions to include competitive aggressiveness and autonomy. The conceptual framework for this study was thus based on entrepreneurial orientation, networking capability, transformational leadership and firm performance. The independent variable was therefore entrepreneurial orientation. The mediating variable was networking capability, the moderating variable was transformational leadership whereas the dependent variable was manufacturing firm performance. Entrepreneurial orientation included innovativeness, risk taking, pro-activeness, autonomy and competitive aggressiveness. Networking included: finding network partners, managing network relationships and leveraging network relationships. Transformational Leadership included articulating a vision, providing an appropriate model, facilitating acceptance of group goals, having high expectation, showing supportive behaviour and offering intellectual stimulation. Finally firm performance included: sales growth, profit margin, customer satisfaction, repeat customer transactions and customer references. This is depicted using Figure 2.4.

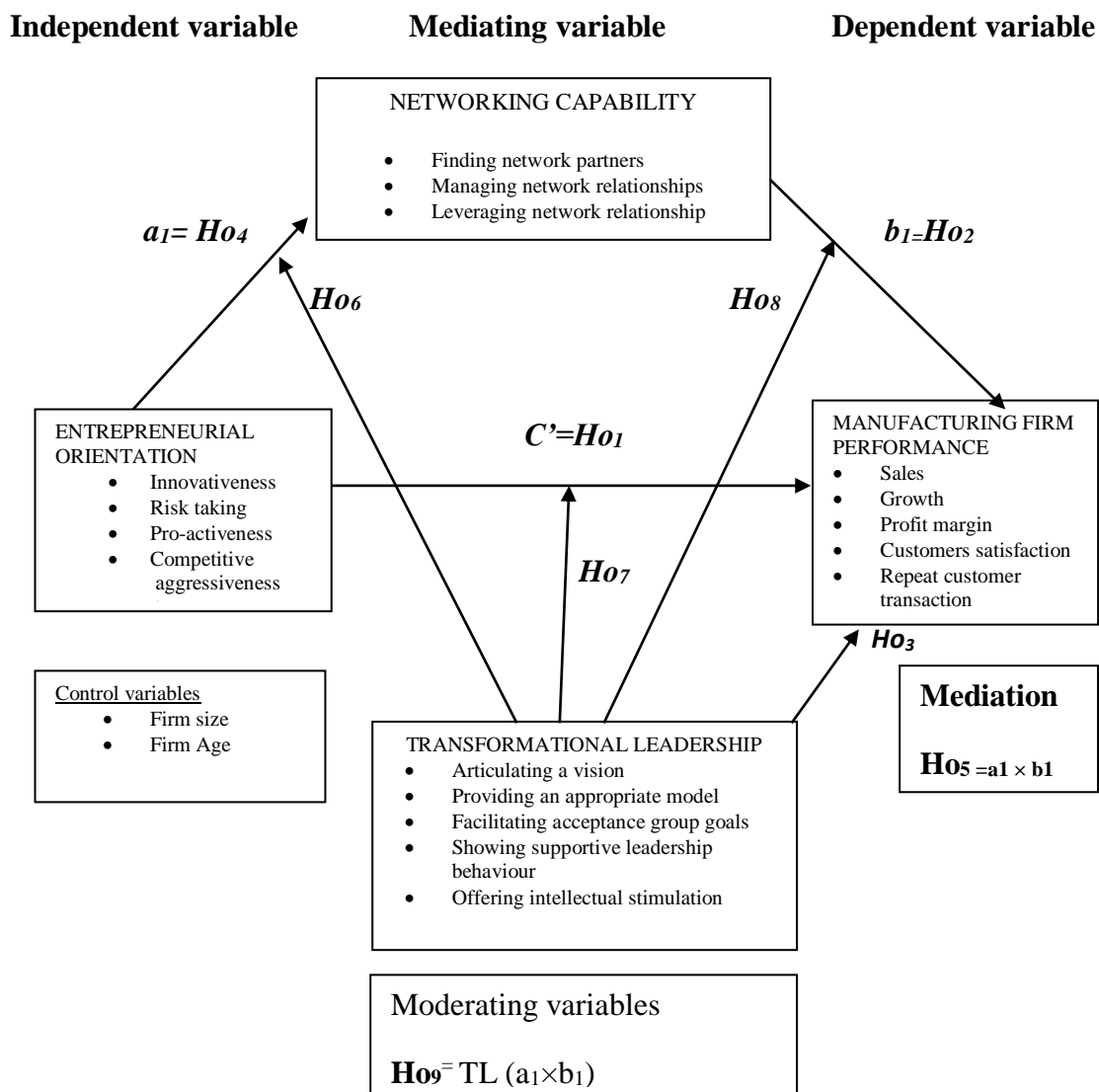


Figure 2.4: Conceptual Framework

Source: (Researcher 2021)

Adopted from Hayes (2018), model 59

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the procedures and methodology that was used in carrying out this study. It covers; research paradigm, research design, the study area, population and sample size determination, types and sources of data, data collection instruments and questionnaire design, pilot test, measurement of variables, validity and reliability tests, data processing and analysis, statistical methods, steps for testing mediation, factor analysis, missing data and outliers, assumptions of multiple regression & tests, summary of statistical tools for hypothesis testing and ethical considerations. The procedures used assisted in achieving the primary purpose of this study.

3.2 Research Paradigm

The study adopted positivism philosophical approach which was an applicable perspective because the effect of entrepreneurial orientation, networking capability and transformational leadership on performance of manufacturing firms was assessed without bias through the use of existing theoretical models as well as structured tools to measure and investigate it, after which conception was done from the discoveries. A paradigm refers to the philosophical rationale or justification for the approach to research and the use of specific data collection, sampling and analysis tools. A research paradigm can be termed as worldview, meaning a basic set of beliefs that guide action. Others have called it epistemologies and ontology, or broadly conceived research methodologies. Research paradigm further can be classified into two philosophical dimensions ontology and epistemology. Ontology is concerned with identifying the nature of reality in the world while epistemology is concerned with the

relationship between the researcher and the research (Denzin & Lincoln, 2000; Creswell, 2009; Guba, & Lincoln, 2005; Crotty 1998; Neuman 2000; Mertens, 1998).

Worldview is a general orientation about the world and the nature of research that a researcher holds. There are four different kinds of worldviews; positivism, constructivism, advocacy/participatory and pragmatism (Creswell, 2009). This study employed the positivism world view which assesses the cause that influences the outcome of study variables. Furthermore, the study aimed at developing knowledge through measurement of objective data using questionnaires as the main research instrument. The study was quantitative in nature and the positivism assumptions hold true more for quantitative research. The assumptions of positivism include: Research is the process of making claims and then refining or abandoning some of them for other claims more strongly warranted; Data, evidence and rational considerations shape knowledge; Research seeks to develop relevant, true statements, ones that can serve to explain the situation of concern or that describe the causal relationships of interest; Being objective is an essential aspect of competent inquiry-researchers must examine methods and conclusions for bias; and Knowledge is conjectural-absolute truth can never be found (Creswell 2009; Oates, 2010; Muijs, 2008).

3.3 Research Design

This study used explanatory research design which enabled the understanding of causal relationships between variables. The strategy for inquiry used was a survey research strategy which obtains the same kind of data from a large group of people or events in a standardized and systematic way and that a researcher then looks for patterns in the data that can be generalized to a large population than the group targeted. A survey research is a common strategy in business and management research facilitating collection and analysis of a given set of characteristics in a

population. Equally, surveys allow for the collection of large data from a population in a highly economical way (McBurney & White, 2010; Oates, 2010; Creswell, 2012; Onen & Oso, 2009; Saunders *et al.*, 2006). The independent variable in this study was Entrepreneurial Orientation; the dependent variable was Firm performance whereas the mediating variable was networking and the moderating variable was transformational leadership. Data was collected through the use of questionnaires.

Research designs are plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis. There are basically three types of research approaches: qualitative, quantitative and mixed methods. Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. Quantitative research on the other hand, is a means for testing objective theories by examining the relationship among variables. Whereas mixed methods research is an approach to inquiry that combines both qualitative and quantitative forms (Creswell & Plano Clark, 2007; Creswell, 2008). Quantitative strategies include surveys and experimental research.

3.4 Study Area

The study area was Nairobi County as defined by the respective boundaries (See Appendix IV). Nairobi County is one of the 47 counties of Kenya. Nairobi County is located in the central region of Kenya and is a bustling economic hub with a diverse range of economic activities. As the capital city of Kenya, Nairobi serves as a major financial, commercial, and industrial center. It hosts the Nairobi Securities Exchange, numerous multinational corporations, financial institutions, and government offices. The city is a hub for trade, transportation, and logistics, with a well-established road and rail network. Additionally, Nairobi is a significant manufacturing center, particularly for food processing, textiles, and construction materials. The tourism

sector also plays a vital role, with Nairobi being a gateway to Kenya's renowned wildlife and national parks, attracting both domestic and international tourists. Its strategic location in the heart of Kenya and East Africa makes Nairobi a pivotal point for business and trade activities within the region.

Nairobi County, home to the capital city of Kenya, it features a subtropical highland climate due to its high altitude at approximately 1,795 meters above sea level. The climate is characterized by moderate temperatures ranging from around 10°C to 26°C throughout the year, making Nairobi one of the cooler African capitals. The city experiences two rainy seasons, the "long rains" from March to May and the "short rains" from October to December, while the dry periods occur from June to September and January to February. Nairobi enjoys a good amount of sunshine and has relatively low humidity levels, contributing to a comfortable and mild climate overall. Strong winds can occur, particularly during the dry months, occasionally affecting visibility with dust.

Nairobi County has been described as the smallest yet most populous of the counties, it is coterminous with the city of Nairobi, which is also the capital and largest city of Kenya. The County has a human population of 4,397,073 million people as per 2019 census. The county is composed of 17 parliamentary constituencies which include: Westlands, Dagoretti North, Dagoretti South, Langata, Kibra, Roysambu, Kasarani, Ruaraka, Embakasi South, Embakasi North, Embakasi Central, Embakasi East, Embakasi West, Makadara, Kamukunji, Starehe and Mathare. This study focused on Nairobi County, and the manufacturing firms which participated in the study were those registered by the Kenya Association of Manufacturers (KAM) as per their 2017/2018 directory.

3.5 Target Population

This study was based on a population composed of sampling frame in Nairobi County as indicated in Table 3.1. The sampling frame for the manufacturing firms was adopted from Kenya Association of Manufacturers (KAM) 2017/2018 directory. The target population consists of 1072 manufacturing firms and this study targeted the top managers, that is, the CEOs/general managers of these firms since EO is a firm level behaviour. A population in the statistical sense represents all people or entities that share common characteristics, encompassing the total collection of all elements about which the researcher wishes to draw conclusions (Waters, 2011).

Table 3.1: Target Population for the Manufacturing Firms categorized as per sectors in Nairobi County, Kenya.

	Manufacturing Firms as per Sectors	Target Population
1.	Building, mining and Construction	39
2.	Chemical and Allied Sector	90
3.	Energy, Electricals and Electronics	58
4.	Fresh Produce	13
5.	Food and Beverages	234
6.	Leather and Footwear	9
7.	Metal and Allied Sector	96
8.	Motor Vehicle and Accessories	59
9.	Paper and Board	82
10.	Pharmaceutical and Medical Equipment	30
11.	Plastics and Rubber	90
12.	Services and Consultancy	169
13.	Textiles and Apparels	73
14.	Timber, Wood and Furniture	30
	TOTAL	1072

Source: Kenya Association of Manufacturers (KAM) 2017/2018 Directory

3.6 Sample Size Determination and Selection

Sample size determination involved a decision on the elements in each sampling frame who participated in the study while the sample size selection involved strategies to be used in selecting individual elements from the population. The sample size

determination, for this study was based on Taro Yamane (1973) formula for calculating the sample size. The formula is as follows:

$$n = N / (1 + Ne^2)$$

Where, n = the corrected sample size

N = Size of the population

e = Margin of error (MoE) of 5 percentage points.

By using Yamane's formula of sample size with an error of 5% and with a confidence coefficient of 95% (Yamane, 1973), the calculation of this study's sample size from a population of 1072 manufacturing firms came up with 400 manufacturing firms. This can be illustrated as follows:

$$n = N / (1 + Ne^2)$$

$$n = 1072 / [1 + 1072(0.05)^2]$$

$$n = 1072 / (1 + 1072(0.0025))$$

$$n = 1072 / 2.6825$$

$$n = 399.6272134203$$

$$n = 400$$

On the other hand, the sample selection for the study was achieved using stratified random sampling techniques. Stratified sampling involves ordering the sampling frame by one or more characteristics and then selecting the same percentage of people from each subgroup using random sampling (Somekh & Lewin, 2009). These sampling approaches were used to achieve representative samples for the study. The individual elements in the manufacturing enterprises who participated in the study were those that had been in operation for more than one year.

An investigation was first done to identify the total number of manufacturing firms in Nairobi County. Sample selection for this study was achieved using stratified random sampling as mentioned above. The study area was divided into 14 sectors of the manufacturing firms (That is, Building, mining and construction; Chemical and Allied; Energy, electrical and electronics; Fresh produce; Food and beverages; Leather and footwear; Metal and Allied; Motor vehicle and accessories; Paper and board; Pharmaceutical and medical equipment; Plastics and rubber; Services and consultancy; Textiles and Apparels and Timber, wood and furniture).

This study employed the Neyman allocation formula for the sample size distribution. The purpose of this method is to maximize survey precision, given a fixed sample size. With Neyman allocation, the best sample size for stratum h is 400. The formula is as follows:

$$n_h = (N_h / N) * n$$

Where n_h is the sample size for stratum h , N_h is the population size for stratum h , N is total population size, and n is total sample size. From each stratum, the researcher gave questionnaires to the total sample arrived at from the allocation to either the CEO or the general manager of the respective manufacturing firms under investigation.

Hence the distribution was as follows:

Table 3.2: Sample Size

Manufacturing Sectors	Target Population	Sample Size	Sample
Building, mining and Construction	39	39/1072*400	15
Chemical and Allied Sector	90	90/1072*400	34
Energy, Electricals and Electronics	58	58/1072*400	22
Fresh Produce	13	13/1072*400	5
Food and Beverages	234	234/1072*400	87
Leather and Footwear	9	9/1072*400	3
Metal and Allied Sector	96	96/1072*400	36
Motor Vehicle and Accessories	59	59/1072*400	22
Paper and Board	82	82/1072*400	30
Pharmaceutical and Medical Equipment	30	30/1072*400	11
Plastics and Rubber	90	90/1072*400	34
Services and Consultancy	169	169/1072*400	63
Textiles and Apparels	73	73/1072*400	27
Timber, Wood and Furniture	30	30/1072*400	11
Total	1072		400

Source: Researcher's Work 2021

3.7 Types and Sources of Data

The data required for this study was primary. Primary data was obtained from questionnaires that included entrepreneurial orientation (innovativeness, risk taking, pro-activeness, autonomy and competitive aggressiveness), networking capability, transformational leadership and firm performance (sales growth, Profit margin, customer's satisfaction, repeat customer transactions and customer references). The data collection instrument was self-administered and explained to the manufacturing firms in detail including its purpose, the meaning of the items and what was expected from them by the researcher with the assistance of a trained research assistant.

3.8 Data Collection Instruments and Questionnaire Design

This study used a questionnaire as the main instrument for collecting data. In this study, survey was the main strategy to research wherein data are standardized, and comparison is easy, however it costs much time to do it (Yin, 1994). In this survey, a

self-completion questionnaire with closed ended questions was adopted and developed. The questionnaires, being the main data collection instruments used in this study were administered by the researcher with the aid of trained research assistants. The questionnaire was comprised of five parts (see Appendix III). Section A consisted items measuring firm performance. Section B contained entrepreneurial orientation measures. Section C included items measuring transformational leadership. Section D had items measuring networking capability and section E contained items that were used to measure the control variables.

A questionnaire is a pre-formulated written set of questions to which respondents record their answers in a pre-determined order. In a questionnaire, respondents are asked to answer the questions providing a researcher with data that can be analyzed and interpreted and that questionnaires are best suited to situations where the researcher wants to obtain standardized data. A questionnaire can further establish rapport and motivate respondents and in a questionnaire doubts can be clarified and the use of closed ended questions makes it easy for respondents to complete it (Bryman & Bell, 2003; Sekaran, & Bougie 2010; Oates 2010).

3.9 Pilot Test

The purpose of a pilot test is to test validity and reliability of the questionnaire and also assist in refining it so that respondents will have no problems in answering the questions and there will be no problems in recording the data. Pilot testing further enables a researcher to obtain assessment of the questions' validity and the likely reliability of the data that will be collected (Saunders, *et al.*, 2009). Pilot tests for this study involved manufacturing firms in Nakuru County since the manufacturing firms there share similar conditions as manufacturing firms in Nairobi County. The size of the population targeted was 10% of the main study meaning that 40 questionnaires

were administered for pilot testing. The study was done before carrying on the main study. The SPSS computer software aided in calculating coefficient correlations that were achieved. Co-efficient alpha of .7 obtained indicated that the research instruments were reliable and therefore were adopted for data collection. According to Gliem & Gliem (2003), a reliability index of .7 is considered ideal for the study which the pilot study qualified and therefore collection of data took off. Thus, the results met the required threshold for further analysis as presented in Table 3.3 and later presented in Table 4.21.

Reliability refers to the extent to which a variable is consistent in what it is intended to measure; the extent to which data collection techniques or analysis procedures will yield consistent findings. The study used multiple items in all constructs such that the internal consistency method was applied. The basis for internal consistency is that the individual items or indicators of the scale should all be measuring the same construct. It is clearly mentioned that a reliability factor less than 0.6 was considered poor, in the range of 0.6 to 0.8 acceptable and 0.8 and above was considered good. Reliability testing was used to test the appropriateness of the questionnaire in this study. In this study, reliability test used Cronbach's Alpha testing as it is the most frequently used reliability test tool by social researches. Cronbach's alpha coefficient was used to test the unity of the sub-scales in the instrument (Hair *et al.*, 2007; Saunders *et al.*, 2009; Sekaran & Bougie, 2010; Cronbach, 1951).

Table 3.3 Reliability Statistics

Variable	Observations (n)	Mean (μ)	Standard Deviation (δ)	Variance (δ^2)	Reliability Test Cronbach's Alpha (α)	Reliability Level*
Section A: Firm performance	9	50.6	7.4	54.8	0.785	Acceptable
Section B: Entrepreneurial Orientation	43	229.5	33.5	1120.9	0.942	Excellent
Section C: Transformational Leadership	24	138.8	21.9	479.1	0.958	Excellent
Section D: Networking Capabilities	12	65.9	11.2	126.4	0.895	Good

***Reliability Level Range** - Excellent: More than 0.90; Good: 0.80-0.89; Acceptable: 0.70-0.79; Questionable: 0.60-0.69; Poor: 0.50-0.59; Unacceptable: Less than 0.59

3.10 Validity Test

This study embraced factor analysis to assess construct validity using principal component analysis (PCA) as the extraction method with varimax rotation method. A measure is valid if it actually measures what it claims to, the degree to which a measure accurately represents what it is supposed to. Validity is concerned with how well the concept is defined by the measures (Ghauri & Gronhaug, 2005, Field, 2005). There are four types of validity that are usually mentioned in texts and in research work; they include face validity, content validity, criterion validity and construct validity. Face validity is a subjective judgment on the operationalization of a construct. Face validity is the degree to which a measure appears to be related to a specific construct, in the judgment of non-experts such as test takers and representatives of the legal system. That is, a test has face validity if its content

simply looks relevant to the person taking the test. It evaluates the appearance of the questionnaire in terms of feasibility, readability, consistency of style and formatting, and the clarity of the language used. In other words, face validity refers to researchers' subjective assessments of the presentation and relevance of the measuring instrument as to whether the items in the instrument appear to be relevant, reasonable, unambiguous and clear (Oluwatayo, 2012). In order to examine the face validity, the dichotomous scale can be used with categorical option of "Yes" and "No" which indicate a favourable and unfavourable item respectively. Where favourable item means that the item is objectively structured and can be positively classified under the thematic category. Then the collected data is analysed using Cohen's Kappa Index (CKI) in determining the face validity of the instrument. D.M. *et al.*, (1975) recommended a minimally acceptable Kappa of 0.60 for inter-rater agreement. Unfortunately, face validity is arguably the weakest form of validity and many would suggest that it is not a form of validity in the strictest sense of the word.

Content validity is the assessment of the correspondence between the individual items and concept. The judgemental approach to establish content validity involves literature reviews and then follow-ups with the evaluation by expert judges or panels. The procedure of judgemental approach of content validity requires researchers to be present with experts in order to facilitate validation. However it is not always possible to have many experts of a particular research topic at one location. This poses a limitation to conduct validity on a survey instrument when experts are located in different geographical areas. Contrastingly, a quantitative approach may allow researchers to send content validity questionnaires to experts working at different locations, whereby distance is not a limitation. In order to apply content validity following steps are followed:

1. An exhaustive literature review to extract the related items.
2. A content validity survey is generated (each item is assessed using three point scale (not necessary, useful but not essential and essential)).
3. The survey should be sent to the experts in the same field of the research.
4. The content validity ratio (CVR) is then calculated for each item by employing Lawshe (1975)'s method.
5. Items that are not significant at the critical level are eliminated.

The CVR (content validity ratio) proposed by Lawshe (1975) is a linear transformation of a proportional level of agreement on how many “experts” within a panel rate an item “essential” calculated in the following way:

$$CVR = \frac{ne - (N/2)}{N/2}$$

Where; CVR is the content validity ratio, *ne* is the number of panel members indicating “essential,” and *N* is the total number of panel members. The final evaluation to retain the item based on the CVR is depends on the number of panels.

Criterion validity is related to theory and that the instrument should be related to other measures or to predict certain outcomes, while construct validity is an issue relating to the internal structure of an instrument and the concept it is measuring (Muijs, 2008; Hair *et al.*, 2007; Fujun *et al.*, 2007; Duggirala *et al.*, 2008; Malhotra 2010). There are three types of criterion validity namely; concurrent validity, predictive and postdictive validity. Predictive validity; the survey is predictively valid if the test accurately predicts what it is supposed to predict. It can also refer to when scores from the predictor measure are taken first and then the criterion data is collected later. in other words, the ability of one assessment tool to predict future performance either in some activity or on another assessment of the same construct. The best way to directly

establish predictive validity is to perform a long-term validity study. Concurrent validity is a type of evidence that can be gathered to defend the use of a test for predicting other outcomes. It refers to the extent to which the results of a particular test, or measurement, correspond to those of a previously established measurement for the same construct. In brief, concurrent validity assesses the operationalization's ability to distinguish between groups that it should theoretically be able to distinguish between. Postdictive validity; For this type of validity, the criterion is in the past. That is, the criterion (for instance, another test) was administered in the past. It is a form of criterion-referenced validity that is determined by the degree to which the scores on a given test are related to the scores on another, already established test or criterion administered at a previous point in time.

Construct validity involves demonstrating relationships between the concepts under study and the construct or theory that is relevant to them. Construct validity has two components: convergent and discriminant validity. There are several ways of demonstrating construct validity, one of which is factor analysis. Factor analysis refers to a number of statistical procedures used to determine characteristics that relate to each other. Factor analysis is particularly useful for examining the relationships between large numbers of variables, disentangling them and identifying clusters of variables that are closely linked together. With the purpose of verifying the construct validity (discriminant and convergent validity), a factor analysis can be conducted utilizing principal component analysis (PCA) with varimax rotation method (Wee & Quazi, 2005). Items loaded above 0.40, which is the minimum recommended value in research are considered for further analysis. Also, items cross loading above 0.40 should be deleted. Therefore, the factor analysis results will satisfy the criteria of construct validity including both the discriminant validity (loading of at least 0.40, no

cross-loading of items above 0.40) and convergent validity (eigenvalues of 1, loading of at least 0.40, items that load on posited constructs) (Straub *et al.*, 2004).

Face validity and Content validity is the weakest level of validity, and is concerned with the relevance and representativeness of items, such as individual questions in a questionnaire, to the intended setting. It is particularly important to measure this if the study is designed to ascertain respondents' knowledge within a specific field, or to measure personal attributes such as attitudes. It can be achieved through conducting a pilot study with people who are similar to the intended study participants. Such relevance can be supported by literature reviews and documentary evidence, where available. Criterion-related validity is a stronger form of validity, established when a tool such as a questionnaire can be compared to other similar validated measures of the same concept or phenomenon. However, where no other measures exist, this will not be possible. The table below shows a summary of the validity components deemed necessary for this study:

Table 3.4: Summary of the types of Validities and measurement techniques

Type of Validity	Explanation	Level of consideration	Techniques
Face validity	Is the degree to which a measure appears to be related to a specific construct, in the judgment of non-experts such as test takers and representatives of the legal system	Recommended	Post hoc theory; Expert assessment of items; Cohen's Kappa Index (CKI) 0.60 acceptable
Content validity	Is the assessment of the correspondence between the individual items and concept	Highly recommended	Literature review; Expert panels or judges; CVRs; Q-sorting
Criterion Concurrent	Is the extent that a measure simultaneously relates to another measure that it is supposed to relate	Mandatory	Correlation analysis
Criterion; Predictive	The extent that a measure predicts another measure	Mandatory	Regression analysis, Discriminant analysis
Criterion; Postdictive	The extent that a measure is related to the scores on another, already established in the past	Mandatory	Correlation analysis
Construct; Discriminant validity	The extent that measures of different constructs diverge or minimally correlate with one another	Mandatory	MTMM; PCA; CFA; PLS AVE; Q-sorting
Construct; Convergent validity	The extent that different measures of the same construct converge or strongly correlate with one another	Mandatory	MTMM; PCA; CFA; Q-sorting
Reliability Internal Consistency	The extent to which a measurement of a phenomenon provides stable and consistent results	Mandatory	Cronbach's a; correlations; SEM reliability coefficients

Source: Straub *et al.*, 2004; Netemeyer *et al.*, 2003; Viswanathan 2005; Engellant *et al.*, 2016

3.11 Measurement and Operationalization of Variables in this Study

The dependent variable in this study was Firm performance which was measured using the following indicators: Sales growth, Profit margin, customer's satisfaction, repeat customer transactions and customer references. The dependent variable was assessed using the Key Performance Indicators (KPIs), also referred to as key success indicators. KPIs refers to a set of quantifiable measurements used to gauge a company's overall longterm performance. KPIs specifically help determine a

company's strategic, financial and operational achievements especially compared to those of other businesses within the same sector (Questions on performance were adopted from the following sources: Murphy *et al.*, 1996; Chong 2008). The questionnaire was applied to know the performance of manufacturing firms in Nairobi County. It was validated and developed by Murphy *et al.*, 1996 and Chong 2008. Responses were recorded on 7-likert scale, 1=strongly disagree and 7=strongly agree and it had 9 items.

In this study, the independent variable was Entrepreneurial Orientation and the measures included: innovativeness, risk taking, pro-activeness, autonomy and competitive aggressiveness (Questions were adopted from the following sources: Hughes & Morgan 2007; Miller/Covin & Slevin 1989). Innovativeness had 9 items, risk taking had 9 items, pro activeness had 12 items, competitive aggressiveness had 6 items and autonomy had 6 items. Entrepreneurial orientation had a total of 42 items measured on a 7-likert scale, 1=strongly disagree through 7=strongly agree.

The mediating variable is networking capability and was measured using: finding network partners with 5 items, managing network relationships with 4 items and leveraging network relationships with 4 items (Questions were adopted from Dyer & Singh, 1998; Gulati, 1998; Mu & Di Benedetto, 2012; Mu *et al.*, 2016). Networking capability had a total of 13 items measured on a 7-likert scale, 1=strongly disagree to 7=strongly agree.

The moderating variable was transformational leadership and was measured using: articulating a vision which had 5 items, providing an appropriate model with 3 items, facilitating acceptance of group goals which had 4 items, having high expectations with 4 items, showing supportive leader behaviour which also had 4 items and

offering intellectual stimulation which had 4 items too (Questions were adopted from Podsakoff, *et al.*, 1990). Transformational leadership had a total of 24 items measured on a 7-likert scale, 1=strongly disagree to 7=strongly agree.

Table 3.5: Summary for the Questionnaire used in this study

S/No.	Variables	Part In	No. of Items	Measurement Level	Sources
1.	Firm Performance	Section A(1)-A(9)	9	Likert Scale + Data transformation	Murphy <i>et al.</i> , 1996; Chong 2008
2.	Innovativeness	Section B(1)-B(9)	9	Likert Scale + Data transformation	Hughes & Morgan (2007); Miller/Covin and Slevin 1989
3.	Risk Taking	Section B(10)-B(18)	9	Likert Scale + Data transformation	Hughes & Morgan (2007); Miller/Covin & Slevin 1989
4.	Pro activeness	Section B(19)-B(30)	12	Likert Scale + Data transformation	Hughes & Morgan (2007); Chang <i>et al.</i> , 2007; Miller/Covin & Slevin 1989
5.	Competitive Aggressiveness	Section B(31)-B(36)	6	Likert Scale + Data transformation	Hughes & Morgan (2007)
6.	Autonomy	Section B(37)-B(42)	6	Likert Scale + Data transformation	Hughes & Morgan (2007)
7.	Transformational Leadership	Section C(1)-C(24)	24	Likert scale + Data transformation	Podsakoff, MacKenzie, Moorman, & Fetter, 1990
8.	Finding Network Partners	Section D(1)-D(5)	5	Likert Scale + Data transformation	Dyer & Singh, 1998; Gulati, 1998; J. Mu & Di Benedetto, 2012; J. Mu <i>et al.</i> , 2016
9.	Managing Network relationships	Section D(6)-D(9)	4	Likert Scale + Data transformation	Dyer & Singh, 1998; Gulati, 1998; J. Mu & Di Benedetto, 2012; J. Mu <i>et al.</i> , 2016
10.	Leveraging Network relationships	Section D(10)-D(13)	4	Likert Scale + Data transformation	J. Mu & Di Benedetto, 2012; J. Mu <i>et al.</i> , 2016

Source: Researcher's Work 2021

3.12 Data Processing and Analysis

3.12.1 Data Processing

Data processing and data analysis assisted in deriving answers to research hypotheses in the study. Data processing facilitated the subjecting of data to analysis in such a way that all relevant data was used in making comparisons in the study. Kothari (2010), suggests that data processing helps in providing answers to the research problem. Data processing involved; data editing, coding, classification and tabulation. Data Editing: Raw data was edited to detect errors, omissions and to correct them where possible. This involved a careful scrutiny of completed questionnaires. Questionnaires returned from the field were all checked and edited before categorizing them. The purpose of editing questionnaires is to ensure that data collected will be accurate and consistent thereafter data coding. Data Coding: This entails the assignment of numerals so that the responses can be put into manageable categories. This is necessary where several opinions can be generated by respondents and few representatives or broad categories have to be identified. Coding was carried out in order to prepare data for analysis and reduction of the classes into forms that can provide information required for critical data analysis. Data Classification: Data based on common characteristics was grouped to achieve meaningful relations. Data Tabulation: This involved an arrangement of data collected into a logical order; to reduce descriptive statements and to facilitate comparison between variables in the study and for the researcher to be in a position to conduct statistical computations.

3.12.2 Data Screening and Data Transformation

Once the questionnaires have been coded, data screening was carried out using sort commands. Information were dependent on the objectives and research hypotheses of the analysis. Empirical data gathered was assessed using descriptive statistical

methods which includes; standard deviation, frequencies and mean. The discoveries were displayed using frequency distribution tables that are an established representation of a number of instances a score or a response took place.

First, factor analysis was conducted to reduce the questionnaire elements that failed validity and reliability tests. Descriptive statistics like standard deviation, intercorrelation, mean and reliability coefficients were calculated to decipher the volatility and interrelation of the sub scales obtained from the factor analysis. The hypotheses were analysed by the use of multiple regressions. A fundamental component factor analysis with varimax rotation was carried out to group the variables in the survey into different elements. In a bid to regulate the number of elements obtained, a minimum Eigen value of one (1) was employed in the factor analysis. Factors containing Eigen value below one were regarded negligible and were therefore set aside. Varimax orthogonal rotation was thereafter employed to cluster variables with higher correlations for the same factors so that every one of them gets illustrated by a particular variable group.

Varimax rotation makes sure that the factors generated will be distinct and have no links with each other. Based on Thompson *et al.*, 2004, it is a multivariate statistical technique that has numerous sorts in utility; first, factor analysis narrows down a huge number of variables into a reduced set of variables (also referred to as factors); Secondly, it establishes underlying dimensions between measured variables; and thirdly, it provides construct validity evidence of self-reporting scales.

3.12.3 Data Analysis Technique

Data analysis involved identification of the data analysis tools, followed by data analysis using various tests. Data analysis was conducted using a computer. This

study embraced multiple regression for data analysis. Statistical Package for Social Sciences (SPSS) software and Microsoft Office Excel were used to format data and analyse it. For the purposes of this study, the following steps were undertaken during the analysis: Response rate analysis; missing data analysis; Descriptive and bivariate analysis; Factor Analysis; Reliability testing; Index construction/data transformation; Outlier analysis; Testing regression assumptions and finally multivariate analysis including hypotheses testing whereby multiple regression was utilized to test and investigate the total effect of entrepreneurial orientation on manufacturing firm performance through networking capability and the moderating role of TL on the relationship. This was summarised in table 3.5 as follows.

Table 3.6: Steps for the Data Analyses

Step 1	Response rate analysis
Step 2	Missing data analysis
Step 3	Descriptive analysis and bivariate analysis
Step 4	Reliability tests
Step 5	Factor analysis (Principal Component Analysis)
Step 6	Reliability tests after factor analysis
Step 7	Data transformation/Index construction
Step 8	Outlier analysis
Step 9	Regression assumption testing
Step 10	Bivariate analysis
Step 11	Hypothesis testing

Source: Researcher's Work 2022

3.13 Statistical Methods

For the purposes of testing the research hypotheses, a number of statistical techniques were employed. Methods used in data analysis were descriptive and inferential analysis (Sincich, 2009; Ghauri & Gronhaug 2010). This study employed both descriptive statistics and inferential statistics as appropriate.

3.13.1 Descriptive Statistics

Descriptive statistics describes the phenomena of interest and is used to analyze data for classifying and summarizing numerical data. It includes the analysis of data using frequencies, dispersions of dependent and independent variables and measures of central tendency and variability and to obtain a feel for the data. Descriptive statistics are important in enabling data to be explored before any further analysis is undertaken (Saunders *et al.*, 2009; Somekh & Lewin 2009; Sekaran, & Bougie 2010). This study used frequencies and percentages, and also means and standard deviation. The study findings were presented by use of frequency distribution tables which give the record for the number of times a score or a response occurs. These enable the researcher to make valid conclusions and recommendations.

3.13.2 Inferential Statistics

Inferential statistics allow researchers to explore in-depth relationships between variables, that is, to explore differences, the nature and extent of relationships and to classify and make predictions. Inferential statistical procedures are divided into two types; parametric and non-parametric statistics. Inferential statistics allows the researcher to present the data obtained in research in statistical format to facilitate the identification of important patterns and to make data analysis more meaningful. Similarly, inferential statistics is employed when generalizations from a sample to population are made (Somekh & Lewin, 2009; Sekaran & Bougie, 2010). The inferential statistical methods used in this study include Pearson correlation, factor analysis, multiple hierarchical regression and process macro model 4 and model 59 for testing the study hypotheses. Pearson correlation was used to show the relationships that exist between variables. The significance of each independent variable was tested at a confidence level of 95%. The regression equation of the study

was applied as shown below, whereby the beta (β) coefficients for each independent variable was generated from the model and subjected to a t-test so as to test each of the hypotheses under study. The regression model that was used in this study was as follows:

3.13.3 Model Formulation for the study

Data in this study was analysed to determine the direct effect of EO on FP, NC on FP, TL on FP and EO on NC. The direct effect analysis was conducted to achieve hypothesis 1-4 which are direct effects. Linear regression analysis is the analysis technique to examine the effects of independent variables on the dependent variable while ‘controlling’ the constant for other independent variables. The statistics that were computed and derived in this study included the coefficient of determinant (R^2) and the (P-values). The significance level (P-value) for each of the variables should be less than 0.05 to demonstrate that the variable is a significant predictor of the dependent variable (Hair *et al.*, 2010). Hierarchical regression model was used for the direct effects in this study because it helps us to understand how much value an additional variable in the model contributes to the variance of the dependent variable (DV).

Model 1: Hierarchical Regression Model

$$FP = \beta_0 + \beta_1FS + \beta_2FA + \epsilon \dots\dots\dots 1$$

This equation was used to determine how much variance the control variable explains the dependent variable.

$$FP = \beta_0 + C + \beta_1EO + \epsilon \dots\dots\dots 2 (H_{01})$$

This equation was used to examine the effect of entrepreneurial orientation on firm performance while holding constant the control variables.

$$FP = \beta_0 + C + \beta_1 EO + \beta_2 NC + \epsilon \dots \dots \dots 3 (H_{02})$$

This equation was used to determine the effect of networking capability on firm performance while controlling for controls and independent variable (EO).

$$FP = \beta_0 + C + \beta_1 EO + \beta_2 NC + \beta_3 TL + \epsilon \dots \dots \dots 4 (H_{03})$$

This equation was used to examine the effect of the moderator (TL) on the dependent variable (FP) while holding constant the controls, the independent variable (EO) and the mediator (NC).

$$NC = a_0 + C + a_1 TL + \epsilon \dots \dots \dots 5(i)$$

$$NC = a_0 + C + a_1 TL + a_2 EO + \epsilon \dots \dots \dots 5(ii) (H_{04})$$

These two equations were used to test the effect of X on M. That is, the effect of entrepreneurial orientation on networking capability.

Model 2: Mediation Model

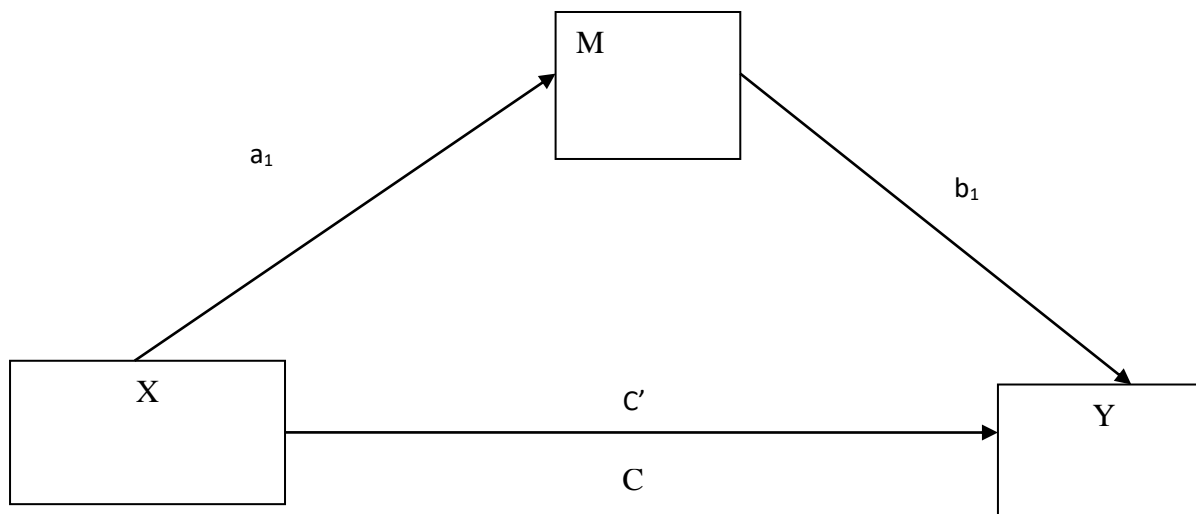


Figure 3.1 Mediation Model
Source: Hayes (2013) Model 4

To test for mediation, this study adopted Mackinnon (2012) procedure which entails;

- i. The independent variable (X) must have a significant relationship with the mediator variable (M). The following equation thus applied;

$$NC = a_0 + C + a_1EO + \epsilon \dots \dots \dots \text{(Mandatory)}$$

- ii. The mediator must have a significant relationship with the dependent variable (Y). The following equation applies;

$$FP = b_0 + C + b_1NC + \epsilon \dots \dots \dots \text{(Mandatory)}$$

- iii. Testing the effect of the independent variable (X) on the dependent variable (Y) in the presence of the mediator (M). At this stage, it is not compulsory for a relationship to exist. If there is a significant relationship, then the researcher can state that there is a partial mediation. On the other hand, if the relationship is non-significant, then it can be said that there is full mediation. The following equation hence applies;

$$FP = C'_0 + C + b_1NC + C'_1EO + \epsilon$$

- iv. Mediation = $a_1 \times b_1 \dots \dots \dots 6 \text{ (H}_{05})$

Or

$$C \text{ (Total effect)} - C' \text{ (Direct effect)}$$

- v. $C \text{ (Total effect)} = a_1 b_1 + C'$

3.13.4 Testing for Moderation

Moderation in this study was tested using Hayes model 59 to show how the prediction of the independent variables (a mediator, and interactions of the independent variables

and a moderator) will influence the prediction (Hayes, 2015). Moderation helps the researcher to distinguish between the three directions of the effect the study predicts to be caused by the moderator on the relationships of variables under study. The first direction is that moderation enhances the relationship whereby through an increase of the aspect it increases the effect. Secondly, is the buffering effect whereby an increase of the aspect on the relationship decreases the effect of the relationship and thirdly, the antagonistic effect, whereby the presence of the moderator, reverses the effect of the relationship between variables. In this study moderation model was used to determine the moderating effect of TL on the relationship between EO and NC, NC and FP and EO and FP.

3.13. 5 Tests for Moderated Mediation

Moderated mediation is when an indirect effect is moderated, that is, the indirect effect varies across levels of the moderator. Moderated mediation refers to the integration of moderation and mediation analysis to understand the conditional nature of the mechanism by which a variable transmits its effect on another. The research hypothesis H_{09} for moderated mediation will test the indirect effect of EO on FP through NC conditioned by TL.

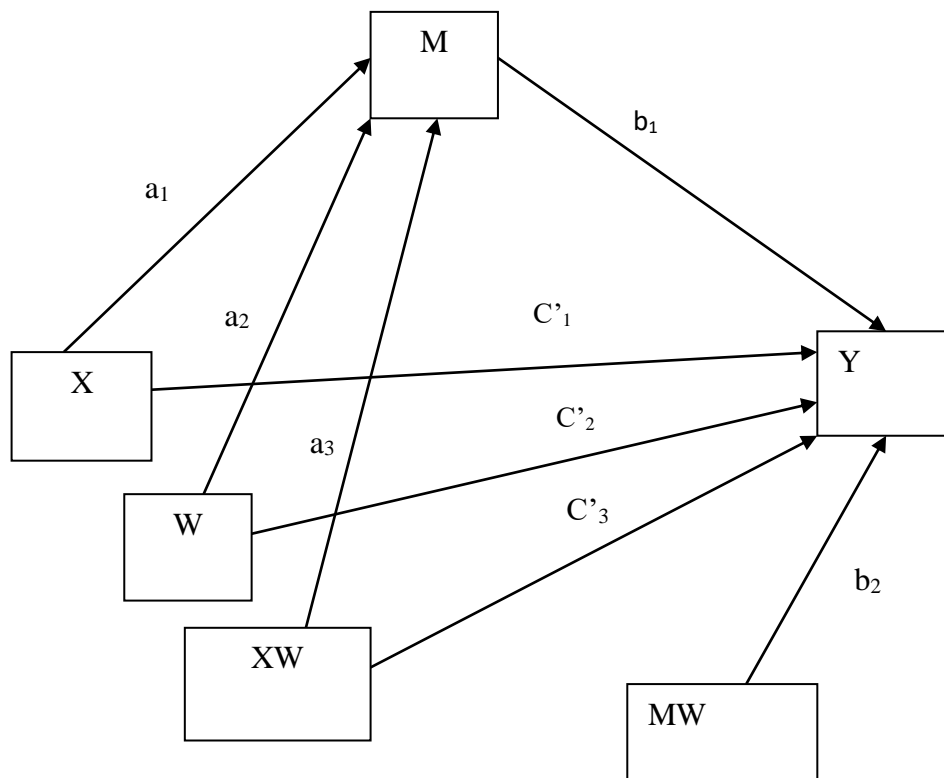


Figure 3.2 Statistical Diagram for Moderation and Moderated Mediation
Source: (Hayes, 2012)

Application of Hayes Model in this study

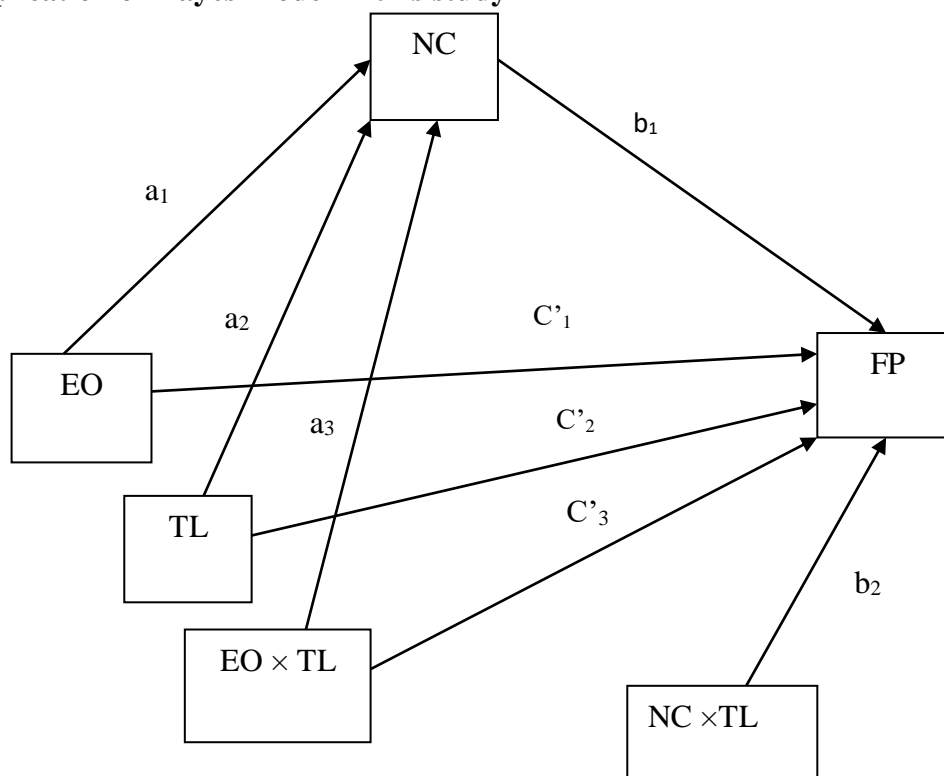


Figure 3.3 Statistical Diagram for Moderation and Moderated Mediation
Source: (Researcher, 2021)

Model 3; Moderation Model

To test for the moderating role of transformational leadership (W) on the relationship between entrepreneurial orientation (X) and networking capability (M), the following equation was used;

$$NC = a_0 + C + a_1EO + a_2TL + a_3(EO \times TL) + \epsilon \dots \dots \dots 7 (H_{06})$$

To test the moderating effect of TL (W) on the relationship between EO (X) and FP (Y), the following equation applies;

$$FP = C'_0 + C + C'_1EO + C'_2TL + C'_3(EO \times TL) + \epsilon \dots \dots \dots 8 (H_{07})$$

Finally to establish the moderating effect of TL (W) on the relationship between NC (M) and FP (Y), the following equation applied;

$$FP = b_0 + C + b_1NC + b_2TL + b_3(NC \times TL) + \epsilon \dots \dots \dots 9 (H_{08})$$

Model 4; Moderated Mediation

$$W (a_1 \times b_1)$$

The moderating effect of W (transformational leadership) on the indirect relationship between X (entrepreneurial orientation) and Y (firm performance) via M (networking capability) was established using the following equation;

$$FP = (a_1 + a_3TL) (b_1 + b_2TL) \dots \dots \dots 10 (H_{09})$$

Where:

EO.....Entrepreneurial Orientation (Independent variable)

NC.....Networking Capability (Mediating variable)

FP.....Firm Performance (Dependent Variable)

TL.....	Transformational Leadership (Moderating Variable)
FA.....	Firm Age (control variable)
FS.....	Firm Size (control variable)
C'.....	Direct effect
C.....	Control variables
a_1 - a_3	Constant Coefficients
β_0 – β_3	Coefficient Betas
£.....	Error term

3.14 Steps for Testing Mediation Effects.

3.14.1 The Concept of Mediation

Statistical mediation analysis is commonplace in psychological science. Mediation implies a situation where the effect of the independent variable on the dependent variable can best be explained using a third mediator variable which is caused by the independent variable and is itself a cause for the dependent variable. That is to say, instead of X causing Y directly, X is causing the mediator M, and M is in turn causing Y. The causal relationship between X and Y in this case is said to be indirect. In this study therefore, X (independent variable) is entrepreneurial orientation, Y (dependent variable) is firm performance and M (mediator variable) is networking capability. (Hayes & Scharkow, 2013; Hayes & Preacher 2014; Azen, 2003). Mediating variables, in contrast to moderating variables, show indirect relationship between EO and firm performance and address to the issue not of when the specific events occur, but why they take place and why the relationship is possible. Mediators help to reveal the mechanism through which EO influences firm performance and the causal chain between two related variables. When testing the hypotheses about mediating variables, the researchers test both the direct relationship between EO and firm

performance, and indirect relationship through mediator, and check whether the mediator enhances the relationship or not. (Baron & Kenny 1986; Wales *et al.*, 2011).

3.14.2 Testing for Mediation

Mediation effect of networking capability was tested using Bootstrapping with the aid of SPSS as demonstrated by Hayes (2013), under PROCESS macro model 4. PROCESS macro is a model developed to accommodate simple to complicated statistics using the latest techniques. For mediation models macro provides various measures of the effect size of indirect effects, together with bootstrapping confidence intervals for the inferences of the effect size (Hayes 2012). Hayes provides a robust technique which is able to test the significance of indirect effects and avoiding Type II error in mediation analyses likely to occur in Baron and Kenny’s (1986) method (Preacher & Hayes, 2014).

The single mediator model or X to M to Y is shown in Equations 1 to 3:

$$Y = i_1 + c X + e_1 \dots \dots \dots (1)$$

$$Y = i_2 + c' X + b M + e_2 \dots \dots (2)$$

$$M = i_3 + a X + e_3 \dots \dots \dots (3)$$

Mediation = $a_1 \times b_1$

Where;

Y is the dependent variable,

X is the independent variable,

M is the mediator;

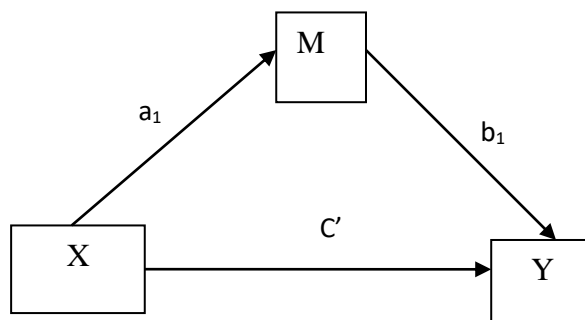


Figure 3.4: Mediation Model
Source: Hayes (2013) model 4

The coefficients i_1 , i_2 , and i_3 are intercepts in each equation; and e_1 , e_2 , and e_3 are residuals.

In Equation 1, the coefficient c represents the total effect (that is, the total effect that X can have on Y). In Equation 2, the coefficient c' denotes the relation between X and Y controlling for M , representing the direct effect (that is, the effect of X on Y that is not intervened by M). The coefficient b denotes the relation between M and Y controlling for X . Finally, in Equation 3, the coefficient a indicates the relation between X and M . The current practice of statistical mediation analysis can be grouped into three approaches: (a) causal steps, (b) difference in coefficients, and (c) product of coefficients (MacKinnon, Lockwood, *et al.*, 2002), which are all based on the information from the regression equations for testing the single mediator model. The first approach to statistical mediation analysis, called the *causal steps approach*, is based on the influential work of Baron and Kenny (1986); Kenny, *et al.*, (1998) and Judd and Kenny (1981a, 1981b), originating in Hyman (1955) and Lazarsfeld (1955).

In this approach, a researcher conducts four steps of analyses to establish mediation and estimate Equations 1 to 3. First, the independent variable X should be significantly related to the dependent variable Y , resulting in the significant coefficient c in Equation 1. Second, the independent variable X should be significantly related to the hypothesized mediating variable M , producing a significant coefficient a in Equation 3. Third, the mediating variable M must be significantly related to the dependent variable Y , controlling for the independent variable X , thus finding a significant coefficient b , in Equation 2. Finally, the relation between the independent variable X and the dependent variable Y should be weaker when the mediating variable M is added to the model. Thus, the coefficient c' should be smaller than the coefficient c (that is, $c - c' > 0$). In the causal steps approach, the conditions by which a

potential mediator is identified as a significant mediator are clearly established, but the mediated effect is not directly estimated (Alwin & Hauser, 1975; MacKinnon, 2008).

The other two approaches, the *difference in coefficients* and the *product of coefficients* approaches, involve estimation of the mediated or indirect effect and its standard error, allowing formal tests for significance of the mediated effects. In the difference in coefficients approach, the mediated effect is estimated by comparing the relations between the independent variable X and the dependent variable Y from Equations 1 and 2, where the effect of X on Y is estimated with and without adjusting for the mediator M . The idea is that the mediated effect can be estimated by the difference between the total effect and the direct effect that is not attributable to the mediator, $c - c'$. In the product of coefficients approach, the mediated effect is estimated by the product of a and b , ab (Alwin & Hauser, 1975), from Equations 2 and 3. Thus, the mediated effect reflects the extent to which the independent variable X changes the mediator M and the extent to which the mediator changes the dependent variable Y . The quantities in Equations 1 to 3 can also be presented in a plot. (MacKinnon, 2008). Further, the product of coefficients method, involves estimating Equations 2 and 3 and computing the product of a and b , ab , to form the mediated or indirect effect (Alwin & Hauser 1975). The rationale behind this method is that mediation depends on the extent to which the program changes the mediator, a , and the extent to which the mediator affects the outcome variable, b . To test for significance, the product is then divided by the standard error of the product and the ratio is compared to a standard normal distribution. This study will embrace the product of coefficients approach in estimating the mediated effect.

3.14.3 Assumptions of the Single Mediator Model

Most current developments in mediation analysis address statistical and inferential assumptions of the mediation model. For the ab estimator of the mediated effect, several simultaneous regression analysis assumptions are required, including;

- That the mediator and the residual in Equation 2 are independent
- That the residuals in Equations 2 and 3 are independent.
- It is also assumed that there is not an interaction between X and M in Equation 3, although this interaction can be tested and in some cases may be expected on the basis of theory.
- The temporal order of the variables in the model is also assumed to be correctly specified (for instance, $X \rightarrow M \rightarrow Y$ rather than $X \rightarrow Y \rightarrow M$).
- Several other types of model specification are assumed to be correct, including self-containment (that no variables related to the variables in the mediation equations are left out of the estimated model and that coefficients estimate causal effects.
- It is also assumed that the model has minimal errors of measurement (MacKinnon, 2008; McDonald, 1997; Holland, 1988; James & Brett, 1984; McDonald, 1997).

3.14.4 Complete Versus Partial Mediation

Researchers often test whether there is complete or partial mediation by testing whether the c' coefficient is statistically significant, which is a test of whether the association between the independent and dependent variable is completely accounted for by the mediator (James *et al.*, 2006). If the c' coefficient is statistically significant and there is significant mediation, then there is evidence for partial mediation.

Because psychological behaviours have a variety of causes, it is often unrealistic to expect that a single mediator would be explained completely by an independent variable to dependent variable relation (Judd & Kenny 1981).

3.15 Factor Analysis

This study embraced factor analysis in simplifying large number of intercorrelated measures to a few representative constructs or factors, and to also demonstrate construct validity. The principal component analysis was used as a method of extraction since for the researcher, the main aim was to reduce data so as to obtain the minimum number of factors needed to represent the original set of data (Robert Ho, 2006). Factor analysis operates on the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality. These unobservable factors are not directly measured but are essentially hypothetical constructs that are used to represent variables. The main aim of factor analysis is to summarize data so that relationships and patterns can be easily interpreted and understood. It is normally used to regroup variables into a limited set of clusters based on shared variance. Hence, it helps to isolate constructs and concepts. (J. DeCoster, 1998; Bartholomew, *et al.*, 2011).

The two main factor analysis techniques are Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). CFA attempts to confirm hypotheses and uses path analysis diagrams to represent variables and factors, whereas EFA tries to uncover complex patterns by exploring the dataset and testing predictions. In addition, Factor analysis is a collection of methods used to examine how underlying constructs influence the responses on a number of measured variables. Exploratory factor analysis (EFA) attempts to discover the nature of the constructs influencing a set of

responses. Confirmatory factor analysis (CFA) tests whether a specified set of constructs is influencing responses in a predicted way (J. DeCoster, 1998; Bartholomew, *et al.*, 2011; Cattell, 1973; Child, 2006).

Factor analysis, further is a technique that allows for the reduction of a large number of variables or questions to a smaller number of variables, 'super variables' or 'latent variables' or factor variables. It does this by attempting to account for the pattern of correlations between the variables in terms of the factors. Factor analysis groups variables with similar characteristics together. In other words, it explains a pattern of similarity between observed variables (Field, 2005).

3.16 Missing Data and Outliers

Outliers are observations with a unique combination of characteristics identifiable as distinctly different from the other observations. Typically, it is judged to be an unusually high or low value on a variable or a unique combination of values across several variables that make the observation stand out from the others. Outliers occur due to varied reasons including: procedural error for example a data entry error or a mistake in coding; extraordinary event which accounts for the uniqueness of the observation; extraordinary observations for which the researcher has no explanation and observations that fall within the ordinary range of values on each of the variables. This study used the Mahalanobis D^2 measure, which is a multivariate assessment of each observation across a set of variables to detect and address the issue of outliers. Missing data are a nuisance to researchers and primarily result from errors in data collection or data entry, or from the omission of answers by respondents (Hair *et al.*, 2010). If this occurs, the researcher will go through the questionnaires once again to find out where the missing data emanated from and corrective measures will be applied as appropriate.

3.17 Assumptions of Multiple Regression Model and their Tests

Multiple regression analysis is a statistical tool used to predict a dependent variable from multiple independent variables. The independent variables (also called predictor variables) are usually not under experimental control and the variations observed in them are to be accepted for what they are. The focus of multiple regression is to investigate which, if any, of these predictor variables can significantly predict the dependent variable. Multiple regression holds an increase in utility within the social sciences as it allows for more comprehensive analysis of constructs related to human behaviour (Harlow, 2005; Stevens, 2009).

Most statistical tests rely on certain assumptions about the variables used within an analysis to ensure that the analysis is as accurate and true as possible, and therefore valid. Assumptions are critical in statistics because if the underlying assumptions are not valid, then the process is unreliable, unpredictable, and out of the researcher's control. This could lead the researcher to draw conclusions that are not valid or scientifically unsupported by the data. Researchers are encouraged to examine the data of an analysis to ensure the values are plausible and reasonable. The assumptions of multiple regression include the assumptions of linearity, normality, independence, homoscedasticity and absence of multi-collinearity (Osborne & Waters, 2002; Stevens, 2009).

When completing multiple regression analysis, it is essential for researchers to test the regression model to ensure that the assumptions of multiple regression have been satisfied (Stevens, 2009). When the assumptions are violated, the significance may be over or under estimated, increasing the risk of committing a Type I or Type II error (Osborne & Waters, 2002). The assumptions of multiple regression can be tested through a visual examination of histograms of the standardized residuals, residual

plots of standardized residuals and predicted values, and by the Durbin Watson statistic, all of which may be obtained through multiple regression analysis using SPSS, as well as other methods.

3.17.1 Assumption of Linearity

Relationships between variables are considered linear when they are consistent and directly proportional to each other. It is imperative to examine analysis for nonlinearity as there are many instances in the social sciences where nonlinear relationships occur. Violations of this assumption may result in the estimates obtained from the analysis, such as R^2 , regression coefficients, standard errors, and statistical significance, being biased; therefore, not portraying the accurate or true population values. According to Hox (1995), the results from the analysis will underestimate the true relationship between the independent variables (predictor variables) and dependent variable if the relationship is not linear. This underestimation of the results could lead to two areas of concern; first, an increase risk of Type II error could occur for that predictor variable, and second, an increase risk of Type I error (which is an overestimation) for the other predictor variable(s) that share variance with that predictor variable could occur (Stevens, 2009; Tabachnick & Fidell, 2006; Kivulu, 2003; Hox, 1995; Osborne & Waters, 2002).

The linearity assumption in this study was tested through the visual examination of residual plots (Kivulu, 2003; Osborne & Waters, 2002; Stevens, 2009). A residual scatter plot is a figure that depicts one axis for the standardized residuals (r_i) and the other axis for the predicted values (y_i) (Stevens, 2009). If the linearity assumption is met, the standardized residuals will scatter randomly around a horizontal line which represents the standardized residuals equaling zero ($r_i=0$) (Stevens, 2009; Tabachnick & Fidell, 2006). When linearity is violated, the residual plot portrays a c-curved or u-

curved shape of distribution around the horizontal line. Residual plots can be viewed during an initial screening run of the analysis or after the analysis has been conducted. However, by investigating a residual plot in the early stages of an analysis, the sooner detection of possible nonlinear relationships can occur; therefore, allowing the researcher to manage data information and time allotment for analysis more effectively and accurately (Hox, 1995). If the assumption of linearity is violated, the problem is referred to as the collinearity problem. In case a non-linear relationship or collinearity will be detected, data values for this study will need to be transformed to achieve linearity.

3.17.2 Assumption of Independence

Multiple regression assumes that the errors, which are the residuals between the actual score and the estimated score obtained through the regression equation, are independent and there is no serial correlation. Having no serial correlation between the residuals implies that the size of the residual for one variable has no impact on the size of the residual for another variable. Therefore, the independence assumption requires that the variables and residuals are independent and the subjects are responding independently of each other. The independence assumption is a significant assumption that should be investigated prior to any interpretation of multiple regression analysis, as violation of this assumption could hold critical implications. Even a slight violation of the independence assumption should be taken seriously, as it can greatly increase the risk of Type 1 error, resulting in the risk of falsely rejecting the null hypothesis several times greater than the level of error assumed for the test (Stevens, 2009).

The Durbin-Watson was used to test independence in the study and it is a statistic test which can be used to test for the occurrence of serial correlation between residuals.

The value of Durbin-Watson statistics ranges between 0 and 4, however, the residuals are considered not correlated if the Durbin-Watson statistic is between 1.5 and 2.5 (Stevens 2009). A value closer to 2 indicates no autocorrelation whereas a value towards zero indicates positive autocorrelation. Conversely, a value towards four indicates negative autocorrelation (Hair *et al.*, 2006; Saunders *et al.*, 2009). The D statistic normally tests the null hypothesis that there are no residual correlations ($H_0: \rho=0$) against the alternative hypothesis that positive residual correlation exists ($H_a: \rho > 0$). Hence this study used the Durbin-Watson statistic in testing this assumption.

3.17.3 Assumption of Normality

Screening for normality is an important early step when conducting multiple regression, as it is assumed that residuals are normally distributed. Non-normal distributions that are positively or negatively skewed, contain large kurtosis, or have extreme outliers can distort the obtained significance levels of the analysis, resulting in the standard errors becoming biased. Though multiple regression is generally considered to be quite robust to violations of normality, a small sample size can actually increase the seriousness of non-normality of a distribution. Outliers may have stronger influence on normal distribution when the sample size is small, whereas standard errors for both skewness and kurtosis decrease with larger samples, as there will most likely be only minor deviations from normality (Stevens, 2009; Tabachnick & Fidell, 2006; Osborne & Waters, 2002).

The statistical test for normality of error terms in this study was the Shapiro-Wilks test. The test hypothesizes that the distribution is normal, implying that the null hypothesis predicts that the distribution of the residuals is normal. According to Hair *et al.*, (2006), the Shapiro-Wilks tests the hypothesis that the distribution of error terms is not significantly different from normal. In this respect if the significance

levels for the Shapiro-Wilks statistics is greater than 0.05, the data is normal. If it is below 0.05, the data significantly deviates from a normal distribution. Graphical methods, such as histograms and normality plots, can also be conducted to provide a visual inspection of the normal distribution of a data set prior to further interpretation of the regression analysis (Tabachnick & Fidell, 2006). Histograms can provide important information about the shape of a distribution. If most of the scores are gathered around the middle of the continuum and a gradual, symmetric decrease of frequency on either side of the centre score occurs, it is considered a normal distribution. However, if the scores are not symmetric and are spread out away from the majority it is considered skewed. If the 'tail' (a small number of the distribution) is spread out to the right, it is considered positively skewed, and if the 'tail' is spread out to the left, it is considered negatively skewed. Kurtosis is the shape of any or lack of peaks within a distribution (Tabachnick & Fidell, 2006). Though no distribution can be considered 'perfect', a distribution is regarded as normal when the values of both skewness and kurtosis are zero; however, a suggested acceptable range for both is between -2 and +2. The normality assumption can also be tested through the visual examination of normal probability plots (P-P plots) of the standardized residuals. In a P-P plot, the normal distribution is depicted by a random scatter of plots around a 45-degree line. (Tabachnick & Fidell, 2006). This study used the graphical method through the histogram to further ascertain the normality of the data set.

3.17.4 Assumption of Homoscedasticity (Equal Variance)

The assumption of homoscedasticity indicates that the variance of errors is equal and constant across all levels of the variables. Homoscedasticity is related to the assumption of normality because when the assumption of normality is met, the relationship between the variables is homoscedastic. Heteroscedasticity occurs when

the variance of errors differs at different values of the independent variables. Slight heteroscedasticity has little effect on significance tests; however, when heteroscedasticity is marked it can lead to serious distortions of findings and seriously weaken the analysis thus increasing the possibility of a Type 1 error for small sample size (Osborne & Waters, 2002; Stevens, 2009; Tabachnick & Fidell, 2006).

Homoscedasticity refers to the assumption that the dependent variable exhibits similar amounts of variance across the range of values for independent variables and the Levene's test was used in the study. The statistical tests for equal variance dispersion assess the equality of variance within variables (Hair *et al.*, 2006). The White test/Levene test is used to assess whether the variances of a single variable are equal across any number of variables. White test tests the hypothesis that the variances of error terms are not equal. Therefore, if White test is significant at p is greater than 0.05, then it is concluded that the null hypothesis is incorrect and that the variances of error terms are the same, and so the assumption of unequal variance is violated. Regression errors whose variances are not equal across observations are said to be heteroscedastic (Stevens, 2009). When the homoscedasticity assumption has been met, the residuals will present as being randomly scattered around the horizontal line. There are many forms heteroscedasticity can take, two of which are bow-tie and fan shape (Osborne & Waters, 2002).

3.17.5 Multi collinearity test

The predictor variables are assumed to be linearly independent of each other, that is, there is absence of multi collinearity. If there is a high degree of correlation between independent variables, then it is said that a problem of multi collinearity exists. Multi collinearity occurs when two (or more) independent variables are highly correlated,

thus making it difficult to determine the separate effects of individual variables. (Saunders *et al.*, 2009; Chatterjee & Hadi 2012).

Multi collinearity refers to the presence of correlations between predictor variables. In severe cases of perfect correlations between predictor variables, multi-collinearity creates a shared variance between variables, thus decreases the ability to predict the dependent measure as well as ascertain the relative roles of each independent variable (Hair *et al.*, 2006; William *et al.*, 2013). The diagnostic is to examine the correlation matrix for the independent variables. The rule of thumb is that the presence of high correlations (generally 0.90 and above) indicates substantial collinearity (Hair *et al.*, 2006). Collinearity may also be due to the combined effect of two or more other independent variables. In this study therefore, multi-collinearity was assessed by means of tolerance and variance inflation factor (VIF). Tolerance is a direct measure of multi-collinearity and is defined as the amount of the variability of the selected independent variable not explained by the other independent variables. VIF is another measure of multi-collinearity and it is calculated simply as the inverse of the tolerance value. Hair *et al.*, (2006) recommends that a very small tolerance value (0.10 or below) or a large VIF value (10 or above) indicates high collinearity.

3.18 Summary of Statistical Tools for Hypotheses Testing

Table 3.7: Summary of Hypotheses testing tools in the study

	Hypotheses statements	Test Statistic	Decision
H₀₁	There is no significant direct effect of entrepreneurial orientation on the performance of manufacturing firms.	β, $P \leq 0.05$, $t \geq 1.96, R^2 \Delta R^2$	Reject
H₀₂	There is no significant direct effect of Networking Capability on performance of manufacturing firms	β, $P \leq 0.05$, $t \geq 1.96, R^2 \Delta R^2$	Reject
H₀₃	There is no significant direct effect of Transformational Leadership on the performance	β, $P \leq 0.05$, $t \geq 1.96, R^2 \Delta R^2$	Reject

	of manufacturing firms		
H₀₄	There is no significant direct effect of entrepreneurial orientation on Networking Capability.	$\beta, P \leq 0.05, t \geq 1.96, R^2 \Delta R^2$	Reject
H₀₅	There is no mediating effect of Networking Capability on the relationship between Entrepreneurial Orientation and manufacturing firm performance	LLCI and ULCI (there must be a non-zero)	Reject
H₀₆	Transformational leadership has no significant moderating effect on the relationship between Entrepreneurial Orientation and networking capability	$\beta, P \leq 0.05, t \geq 1.96, R^2 \Delta R^2$	Reject
H₀₇	Transformational leadership has no significant moderating effect on the relationship between Entrepreneurial Orientation and performance of manufacturing firms.	$\beta, P \leq 0.05, t \geq 1.96, R^2 \Delta R^2$	Reject
H₀₈	Transformational leadership has no significant moderating effect on the relationship between Networking Capability and performance of manufacturing firms	$\beta, P \leq 0.05, t \geq 1.96, R^2 \Delta R^2$	Reject
H₀₉	Transformational leadership has no significant moderating effect on the indirect effect of entrepreneurial orientation on performance of manufacturing firms via networking.	LLCI and ULCI (use confidence interval levels and there must be a non zero)	Reject

3.19 Ethical Considerations

Ethical clearance and approval to conduct this research was first obtained from Moi University, School of Business and Economics in the form of a letter of introduction introducing the researcher as a PHD student (**appendix I**). The researcher also sought authorization from the National Commission of Science and Technology Institute (NACOSTI) to conduct research (**appendix V**). The researcher further sought permission to collect data from the various manufacturing firms in Nairobi County (**appendix II**). The researcher further needed to ensure high degree of description, tolerance and patience. There was need to observe the ethical issues of integrity, honesty and confidentiality while dealing with the respondents. Informed consent of participants was assured by communicating the purpose, expected duration of participation and benefits of participating in this study. A letter stating the purpose of

the study and how the researcher intends to maintain privacy, confidentiality and anonymity was attached to the questionnaire and given to the respondents. The researcher with the assistance of the research assistants made pre-visit to the sampled firms prior to collecting data to inform the respondents of the research and its purpose.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.0 Introduction

This chapter presents data analysis of study variables described in the previous chapter. The chapter has a specific focus on the analysis, interpretation and discussion of study findings. It provides an overview of the data processing and screening, response rate, missing data, firm characteristics, reliability tests, factor analysis, and presentation of descriptive and inferential statistical results.

4.1 Data Processing and Screening

Data processing comprised of coding responses, cleaning, screening, and choosing the best data analysis approach for testing the hypothesis. Data coding involved summarizing and representing data using numeric symbols in order to provide a systematic description of the observed phenomenon and minimize errors during analysis. A code was issued to each questionnaire response, which was then loaded into a statistical analysis software (IBM SPSS Version 25). Furthermore, to ensure accuracy and completeness, the data was cleaned and screened for inconsistencies and missing responses.

4.2 Response Rate

The response rate, which is commonly stated as a percentage, is calculated by dividing the number of respondents who participated in the study by the total number of participants in the sample. The researcher with the aid of the research assistants issued self-administered questionnaires to respondents working in the sampled companies within Nairobi County of the Republic of Kenya. An initial advance notice was issued to the participating companies to ensure that the

targeted sample was fully met prior to distributing the questionnaires to respondents. Subsequently, follow up was done to ensure all the 400 administered questionnaires were completed by the respondents and returned to the researcher (Anseel *et al.* 2010). Therefore, this represents a response rate of 100% which indicates a good representation of the study population, lending credibility to the research study and the subsequent findings **Table 4.1**.

Table 4.1: Questionnaires Returned for Analysis

Response	No. of questionnaires	Percentage (%)
Effective questionnaires administered	400	100%
Returned questionnaires	400	100%
Total	400	100%

Source: Research data (2022)

4.3 Missing Data

In this study missing responses were checked during data cleaning and screening. Prior to analyzing the data, descriptive statistics were utilized to check whether any values were missing during the data entry process and any inconsistencies were addressed instantly. The researcher received all of the 400 questionnaires, with ten (10/400, 2.5%) of the questionnaires having missing data (**Table 4.2**). Hence, the mean value substitution approach was utilized to replace the missing data. Mean value substitution method is valid when the percentage of missing values is below five percent of the total observed values in order to obtain an unbiased mean estimation (Hair *et al.*, 2021). Prior to replacing the missing data, Levene's test for equality of variance was used to assess whether data were missing completely at random and insignificant p-values meant that the condition was met (**Table 4.3**). Therefore, mean value substitution was appropriate for use in this study with the researcher replacing missing data with the series mean for variables with missing values.

Table 4.2: Missing data

	Variables				
	API.The revenue (sales) of our company continues to grow	BR4. In general, the top managers of our firm have a strong proclivity for low-risk projects (with normal and certain rates of return)	BCA1. Our firm adopts a price- cutting strategy to enhance competitive position	CE4. Will not settle for the second best	DNP2. Our organisation has a system or mechanism in place to help us search globally to identify appropriate network partners
Valid	398	398	398	398	398
Missing (n)	2	2	2	2	2
Mean	6.30	5.15	5.28	5.16	5.92
Median	6.00	6.00	5.00	6.00	6.00
Mode	7	6	6	6	6
Std. Deviation	.756	1.448	1.318	1.494	.907
Range	3	6	6	6	5
Minimum	4	1	1	1	2
Maximum	7	7	7	7	7

Table 4.3: Test for Data Missing Completely at Random

Variable	Firm Age	Data	N	Mean	Std. Deviation	F	Sig.																																																																																																								
API	Firm Age	0	2	27.0	7.1	1.1	.303																																																																																																								
		1	398	34.2	22.4				Firm Size	0	2	574.5	583.4	.03	.869	1	398	591.4	1333.5	BR4	Firm Age	0	2	52.0	1.4	1.9	.166	1	398	34.1	22.3		Firm Size	0	2	652.5	498.5	.1	.814	1	398	590.8	1333.5	BCA1	Firm Age	0	2	42.0	18.4	.1	.771	1	398	34.2	22.3		Firm Size	0	2	712.0	124.5	.3	.586	1	398	590.7	1333.7	CE4	Firm Age	0	2	33.0	14.1	.3	.569	1	398	34.2	22.4		Firm Size	0	2	708.0	67.9	.4	.555	1	398	590.7	1333.7	DNP2	Firm Age	0	2	37.5	6.3	1.2	.282	1	398	34.2	22.4		Firm Size	0	2	308.0	325.3	.1	.705
	Firm Size	0	2	574.5	583.4	.03	.869																																																																																																								
		1	398	591.4	1333.5			BR4	Firm Age	0	2	52.0	1.4	1.9	.166	1	398	34.1	22.3		Firm Size	0	2	652.5	498.5	.1	.814	1	398	590.8	1333.5	BCA1	Firm Age	0	2	42.0	18.4	.1	.771	1	398	34.2	22.3		Firm Size	0	2	712.0	124.5	.3	.586	1	398	590.7	1333.7	CE4	Firm Age	0	2	33.0	14.1	.3	.569	1	398	34.2	22.4		Firm Size	0	2	708.0	67.9	.4	.555	1	398	590.7	1333.7	DNP2	Firm Age	0	2	37.5	6.3	1.2	.282	1	398	34.2	22.4		Firm Size	0	2	308.0	325.3	.1	.705	1	398	592.7	1333.5								
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0: Missing Data**1:** Valid Responses**Level of statistical significance:** $\leq .05$

4.4 Firm Characteristics

This section discusses the characteristics of the sampled firms included in the study. This information is used to provide the basis for further analysis in accordance with specific research objectives. The findings are reported using descriptive statistics, frequency tables and percentages. The firm characteristics pertain to the firm size and firm age. The median firm size was 295 (IQR:634) with the smallest company having 18 employees and the largest firm having slightly over 10000 employees (**Table 4.4**). On the other hand, the median firm age for the firms included in the study was 27 years (IQR:23) since being established. The youngest company had been in operation for 3 years with the oldest company having been in operation for 132 years (**Table 4.4**). The median was the most accurate measure of central tendency for both firm age and firm size due to their skewed distributions and non-normality signified by statistically significant p-values of <.001 for Shapiro-Wilks test of normality (Frost, 2020).

Table 4.4: Firm descriptive statistics (N=400)

Variables Name	Median	Min	Max	Mean	SD	SK	KS	S-W Sig.
Firm Age (Years)	27	3	132	34.2	22.3	1.9	5.2	.000
Firm Size (Number of employees)	295	18	10150	591.3	1330.4	5.9	37.6	.000

SD: Standard Deviation; **SK:** Skewness; **KS:** Kurtosis; **S-W:** Shapiro-Wilks Test

4.5 Descriptive Statistics for the Measurement Items

Descriptive statistics analyses were performed on all variables after factor analysis on the retained items measuring firm performance (9 items), entrepreneurial orientation (40 items), transformational leadership (24 items) and networking capability (12 items). The descriptive statistics include means and standard deviations.

4.5.1 Descriptive Statistics for Manufacturing firm Performance

Firm performance (FP) is considered the dependent variable in this study. **Table 4.5** indicates the results of descriptive statistics for items measuring firm performance. Nine items of this variable were measured using a seven-point Likert scale. The statistics indicates that majority of the respondents agree that a good measure of firm performance is the continuous growth of a company's revenue or sales as this item scored the highest mean of 6.30 and a standard deviation of 0.755. Other accurate measures of firm performance as agreed to by the respondents were with regards to decline in complaints from customers, satisfactory performance, increased number of old customers providing references to new customers and successful efforts in attracting and retaining new customers as these items scored means of 6.16, 6.12, 6.09 and 6.08 with standard deviations of 0.729, 0.774, 0.751 and 0.718 respectively.

Table 4.5: Mean and Standard Deviation for Firm Performance (N=400)

FIRM PERFORMANCE	Min	Max	Mean	Std. Deviation
AP1.The revenue (sales) of our company continues to grow	1	7	6.30	0.755
AP2.Our current profitability is very much higher than that of other comparable businesses	1	7	5.12	1.327
AP3.Customers make repeated transactions in our firm	1	7	6.03	0.794
AP4.Complaints from our customers continue to decline	1	7	6.16	0.729
AP5.Our current turnover is very much higher than that of other firms	1	7	5.21	1.324
AP6.We have been very successful in attracting and retaining new customers	1	7	6.08	0.718
AP7.Our firm has been able to satisfy our clients due to the positive comments we receive from them	1	7	5.96	0.765
AP8.The performance of our firm has been satisfactory	1	7	6.12	0.774
AP9.There is an increase in old customers providing references to new customers	1	7	6.09	0.751
Average Value	1	7	5.89	0.88

4.5.2 Descriptive Statistics for Entrepreneurial Orientation

Entrepreneurial orientation (EO) is earmarked as the primary independent variable in this study. The variable is measured using 40 items on a seven-point Likert scale. Results shown in **Table 4.6** shows the five dimensions that constitute EO namely; *innovativeness* (7 items), *risk taking* (9 items), *pro-activeness* (12 items), *competitive aggressiveness* (6 items) and *autonomy* (6 items). The study shows EO had a composite mean of 5.78, SD=0.95 with the minimum value being 1 and a maximum value of 7. Respondents were in agreement that firms seeking new ways of doing things was a good measure of innovativeness as this item scored a mean of 6.36 and SD = 0.729. Innovativeness of a firm were further determined by its creativity in methods operation and active introduction of improvements and innovations as these items had means of 6.27 and 6.16 with SDs of 0.745 and 0.786 respectively. In terms of risk taking as a measure of EO, respondents agreed with the firm adopting a bold and aggressive stance when confronted with decision making situations involving uncertainty. This item had the highest mean of 5.97 with SD =0.768. Descriptive statistics on risk taking further showed that majority of respondents agree with top managers believing that bold and wide-ranging act are necessary to achieving the firm's objectives with a mean of 5.92 and SD = 0.907. On the other hand, pro-activeness as a dimension for EO was measured mostly by the firm continuously monitoring market trends with a mean of 6.36 and SD = 0.76. Other measures of a firm's pro-activeness agreed to by respondents alluded to the firm continuously identifying future needs of customers, the firm marketing new products ahead of competitors and the firm continuously seeking opportunities such as new market related to the present operation, which recorded means of 6.25, 6.21 and 6.14 and SDs of 0.78, 0.729 and 0.688 respectively. Further findings showed that competitive

aggressiveness was mostly measured by the firm being intensely competitive with a mean of 6.28 and SD = .9.19. Lastly, the company's autonomy was determined by employees being given freedom to communicate without interference and employees being permitted to act and think without interference by the firm, as agreed by a majority of respondents with means of 5.73, SD = 0.969 and mean of 5.5, SD = 0.907 respectively.

Table 4.6: Mean and Standard Deviations for Entrepreneurial Orientation

1. INNOVATIVENESS (BN)	Min	Max	Mean	Std. Deviation
BN1. We actively introduce improvements and innovations in our firm	1	7	6.16	0.786
BN2. Our firm is creative in its methods of operation	1	7	6.27	0.745
BN3. Our firm seeks out new ways of doing things	1	7	6.36	0.729
BN4. In general we favor a strong emphasis on the marketing of tried-and-true products or services	1	7	5.98	0.720
BN5. In our company, there exists a very strong emphasis on technological leadership and innovations	1	7	5.79	0.776
BN6. Our firm has marketed very many new lines of products or services in the past five years (or since its establishment)	1	7	5.96	0.863
BN7. In our firm, changes in product lines have usually been quite dramatic	1	7	5.17	1.293
2. RISK TAKING (BR)				
BR1. The term "risk taker" is considered a positive attribute for people in our firm	1	7	5.84	0.856
BR2. People in our firm are encouraged to take calculated risks with new ideas	1	7	5.91	0.790
BR3. Our firm emphasizes both exploration and experimentation for opportunities	1	7	5.90	0.919
BR4. In general, the top managers of our firm have a strong proclivity for low-risk projects (with normal and certain rates of return)	1	7	5.15	1.444
BR5. Generally, the top managers of our firm have a strong proclivity for high-risk projects (with chances of very high returns)	1	7	5.52	1.208
BR6. In general, the top managers of our firm believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour	1	7	5.76	1.036
BR7. Generally, the top managers of our firm believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives	1	7	5.92	0.907
BR8. When confronted with decision-making situations involving uncertainty, our firm typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	1	7	4.98	1.440
BR9. When confronted with decision-making situations involving uncertainty, our firm typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities	1	7	5.97	0.768
3. PRO-ACTIVENESS (BPA)				
BPA1. In our firm, we always try to take the initiative	1	7	5.82	0.831

in every situation (e.g., against competitors, in projects when working with others)				
BPA2. Our firm excels at identifying opportunities	1	7	6.09	0.830
BPA3. Our firm initiates actions to which other organizations respond	1	7	5.83	0.713
BPA4. In dealing with its competitors, our firm typically responds to actions which competitors initiate	1	7	5.75	0.980
BPA5. Our firm constantly seeks opportunities to improve our business performance	1	7	6.09	0.832
BPA6. Our firm continuously identifies future needs of customers	1	7	6.25	0.780
BPA7. Our firm continuously monitors market trends	1	7	6.36	0.760
BPA8. Our firm continuously seeks opportunities such as new market related to the present operation	1	7	6.14	0.688
BPA9. Our firm continuously seeks opportunities such as new customer related to the present operation	1	7	6.02	0.711
BPA10. Our firm adopts technological capabilities ahead of competitors	1	7	6.05	0.741
BPA11. Our firm markets new products ahead of competitors	1	7	6.21	0.729
BPA12. Our firm adopts creative methods of running business ahead of competitors	1	7	6.11	0.694
4. COMPETITIVE AGGRESSIVENESS (BCA)				
BCA1. Our firm adopts a price-cutting strategy to enhance competitive position	1	7	5.28	1.315
BCA2. In general, our firm takes a bold or aggressive approach when competing	1	7	5.84	0.820
BCA3. Our firm tries to undo and out-manoeuvre the competition as best as we can	1	7	5.38	1.144
BCA4. Our firm typically seeks to avoid competitive clashes, preferring a “live-and-let-live” posture	1	7	5.61	1.175
BCA5. Our firm is copying the business practices of successful competitors to enhance competitive position	1	7	5.41	1.372
BCA6. Our firm is intensely competitive	1	7	6.28	0.919
5. AUTONOMY (BA)				
BA1. Employees are permitted to act and think without interference in our firm	1	7	5.50	0.907
BA2. In our firm, employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks	1	7	5.55	0.821
BA3. Employees are given freedom and independence to decide on their own how to go about doing their work in our firm	1	7	5.02	1.302
BA4. Employees are given freedom to communicate without interference	1	7	5.73	0.969
BA5. Employees are given authority and responsibility to act alone if they think it to be in the best interests of the firm	1	7	5.29	1.038
BA6. In our firm, employees have access to all vital information	1	7	4.84	1.583
Average Value	1	7	5.78	0.95

4.5.3 Descriptive Statistics for Transformational Leadership

Transformational Leadership (TL) was considered a moderating variable in the study.

The variable is measured using 24 items on a seven-point Likert scale. Results shown in **Table 4.7** indicates the six dimensions that measure TL including; *articulation of*

vision (5 items), *providing an appropriate model* (3 items), *facilitating acceptance of group goals* (4 items), *having high expectations* (4 items), *showing supportive leader behavior* (4 items) and *offering intellectual stimulation* (4 items). The study shows TL had a composite mean of 5.98, $SD = 0.82$ with the minimum value being 1 and a maximum value of 7. Considering the dimension on *articulation of vision*, respondents majorly agreed on firms always seeking new opportunities, firms inspiring others with their future plans and that firms had a clear understanding of where they were headed with means of 6.44, 6.38 & 6.34 and SDs of 0.668, 0.687 & 0.703 respectively. The firm leading by example was agreed upon by respondents as *providing an appropriate model* with a mean of 6.37 and $SD = 0.755$. To *facilitate acceptance of group goals*, respondents agreed to need for encouraging employees to be team players and getting groups to work together towards achieving a common goal as with means of 6.31 & 6.18 and SDs of 0.758 & 0.751 respectively. Furthermore, respondents agreed that firms' *having high expectations* relied on encouraging employees to be ambitious with a high mean of 6.3 and $SD = 0.69$. On *showing supportive leader behavior*, majority of respondents had a common opinion on respecting employees' personal feelings and acting in consideration of their feelings with means of 5.64 & 5.61 and SDs of 1.0 & 0.892 respectively. Lastly, on *offering intellectual stimulation*, respondents were in agreement with asking questions to prompt employees to think of what they do and having ideas that challenge personnel to reexamine some of the basic assumptions about work with similar means of 5.86 and SDs of 0.816 & 0.852 respectively.

Table 4.7: Means and Standard Deviations for Transformational Leadership

1. ARTICULATION OF VISION (CV)	Min	Max	Mean	Std. Deviation
CV1. Has a clear understanding of where we (as a firm) are going	1	7	6.34	0.703
CV2. Paints an interesting picture of the future of our firm	1	7	6.34	0.692
CV3. Seeks always new opportunities for the firm	1	7	6.44	0.668
CV4. Inspires others with its plans for the future	1	7	6.38	0.687
CV5. Is able to get others committed to its dreams	1	7	6.07	0.835
2. PROVIDING AN APPROPRIATE MODEL (CM)				
CM1. Leads by “doing” rather than simply by “telling”	1	7	6.05	0.717
CM2. Provides a good model for the employees in our firm to follow	1	7	6.05	0.699
CM3. Leads by example	1	7	6.37	0.755
3. FACILITATING ACCEPTANCE OF GROUP GOALS (CG)				
CG1. Fosters collaborating among work groups	1	7	5.91	0.790
CG2. Encourages employees to be “team players”	1	7	6.31	0.758
CG3. Gets the group to work together for the same goal	1	7	6.18	0.751
CG4. Develops a team attitude and spirit among employees	1	7	6.13	0.776
4. HAVING HIGH EXPECTATIONS (CE)				
CE1. Makes it clear to the personnel in our firm that it expects to give 110 percent all the time	1	7	5.91	0.699
CE2. Encourages employees to be ambitious	1	7	6.30	0.690
CE3. Insists on only the best performance	1	7	6.13	0.831
CE4. Will not settle for the second best	1	7	5.16	1.491
5. SHOWING SUPPORTIVE LEADER BEHAVIOUR (CLB)				
CLB1. Acts with consideration the feelings of other employees in the firm	1	7	5.61	0.892
CLB2. Considers the personal feelings of the personnel before acting	1	7	5.46	0.985
CLB3. Shows respect for the personal feelings of the employees in our firm	1	7	5.64	1.004
CLB4. Treats employees with consideration of their personal feelings	1	7	5.51	0.947
6. OFFERING INTELLECTUAL STIMULATION (CS)				
C1S1. Challenges personnel in our firm to think about problems in new ways	1	7	5.82	0.855
C1S2. Asks questions that prompt our employees to think about the way they do things	1	7	5.86	0.816
C1S3. Stimulates to rethink the way employees in our firm do some things	1	7	5.72	0.860
C1S4. Has ideas that have challenged the personnel in our firm to reexamine some of our basic assumptions about work	1	7	5.86	0.852
Average Value	1	7	5.98	0.82

4.5.4 Descriptive Statistics for Networking Capability

Networking Capability (NC) was considered a mediating variable in the study. The variable is measured using the 12 items on a seven-point Likert scale. Results shown in **Table 4.8** indicates the three dimensions that constitute NC namely; *finding network partners* (4 items), *managing network relationship* (4 items) and *leveraging network relationship* (4 items). The study shows NC had a composite mean of 5.91, SD = 0.86 with the minimum value being 1 and a maximum value of 7. Regarding the dimension on *finding network partners*, respondents mostly agreed on their firms having systems or mechanisms for identifying appropriate partners and the firms finding reliable partners when need arises, with a shared mean of 5.92 and SDs of 0.906 and 0.893 respectively. On the other hand, with regard to *managing network relationship*, respondents agreed that their firms needed to constantly analyze relationships with partners to know what adjustments to make and dynamically integrate networking activities into the business operational process with means of 5.92 & 5.90 and SDs of 0.829 & 0.819. Finally, concerning *leveraging network relationship*, respondents had a common opinion on the need for partners to share resources when needed and the firms obtaining the required assistance from partners in a timely manner with means of 6.25 & 5.86 and SDs of 0.867 & 0.835.

Table 4.8: Means and Standard Deviations for Networking Capability

1. FINDING NETWORK PARTNERS (DNP)	Min	Max	Mean	Std. Deviation
DNP1. Our organisation has a system or mechanism in place to help us search locally to find proper network partners	1	7	5.88	0.933
DNP2. Our organisation has a system or mechanism in place to help us search globally to identify appropriate network partners	1	7	5.92	0.906
DNP3. Our organisation has a system or mechanism in place to help us search widely to look for suitable partner	1	7	5.91	0.828
DNP4. Our organisation has a system or mechanism in place to help us find partners to count on when the need arises	1	7	5.92	0.893
2. MANAGING NETWORK RELATIONSHIP (DMR)				
DMR1. Our organisation can design an appropriate mechanism to navigate the dynamics of the partner network	1	7	5.87	0.766
DMR2. Our organisation can fine-tune network partnership relationships	1	7	5.78	0.814
DMR3. Our organisation constantly analyses relationships with partners so that we know what adjustments to make	1	7	5.92	0.829
DMR4. Our organisation can dynamically integrate networking activities into our business operational process	1	7	5.90	0.819
3. LEVERAGING NETWORK RELATIONSHIP (DLR)				
DLR1. Our organisation can obtain the required assistance from our partners in an accurate manner	1	7	5.83	0.799
DLR2. Our organisation can obtain the required assistance from our partners in a timely manner	1	7	5.86	0.835
DLR3. Our partners can refer us to a third party who could help if the partners cannot provide direct help	1	7	5.83	0.983
DLR4. Our partners can share resources with us when we need it	1	7	6.25	0.867
Average Value	1	7	5.91	0.86

4.6 Reliability test of the research instrument

Although this study included measures from previously validated constructs, it was important to conduct a reliability test of the research instrument to see if all items could yield consistent and reliable results. As propounded by Mun *et al.*, 2015, any items with consistently low correlations across the spectrum of measured variables were excluded from the instrument to make it more reliable. The individual components in the reliability test outputs let us determine whether

any of measured variables should be removed in order to the correlation between each measured item and the overall questionnaire score. If the correlation is less than .20, the item may not belong on the scale and should be deleted. The Cronbach's *Alpha* column illustrates the extent to which the coefficient value will be increased if the item is deleted from the instrument (Hair *et al.* 2007; Saunders *et al.* 2009; Sekaran & Bougie, 2010; Cronbach, 1951). Items included in the research instrument were given relevant codes based on the category under which they belong.

4.6.1 Reliability Test for Firm Performance

Results from **Table 4.9** show the overall Cronbach's *Alpha* for the 9 items of Firm Performance (FP) as 0.75 which is at the acceptable range. These results indicate that all items meet the acceptable level of reliability with $r > .20$ and Cronbach's *Alpha* $> .70$ (Gliem & Gliem, 2003), therefore all items were retained.

Table 4.9: Reliability Test for Firm Performance

Cronbach's Alpha: .75	Corrected	Cronbach's Alpha
Total number of Items: 9	Item-Total Correlation	If Item Deleted
AP1.The revenue (sales) of our company continues to grow	0.462	0.724
AP2.Our current profitability is very much higher than that of other comparable businesses	0.467	0.729
AP3.Customers make repeated transactions in our firm	0.415	0.730
AP4.Complaints from our customers continue to decline	0.518	0.718
AP5.Our current turnover is very much higher than that of other firms	0.432	0.737
AP6.We have been very successful in attracting and retaining new customers	0.545	0.715
AP7.Our firm has been able to satisfy our clients due to the positive comments we receive from them	0.367	0.737
AP8.The performance of our firm has been satisfactory	0.462	0.724
AP9.There is an increase in old customers providing references to new customers	0.362	0.738

Source: Research data (2022)

4.6.2 Reliability Test for Entrepreneurial Orientation

A reliability analysis was carried out on the 40 items measuring entrepreneurial orientation. EO as the main construct is made up of five dimensions that include *innovativeness* (BN-7), *risk taking* (BR-9), *pro-activeness* (BPA-12), *competitive aggressiveness* (BCA-6) and *autonomy* (BA-6). **Table 4.10** indicates the overall Cronbach's *Alpha* is at the acceptable reliability, $\alpha = 0.83$. All items appeared to be worthy of retention, with the exception of item BA6 classified under *autonomy* that stated "In our firm, employees have access to all vital information" that correlates with the overall questionnaire score with the least $r = .025$, its deletion increased alpha to $\alpha = 0.84$.

Table 4.10: Reliability Test for Entrepreneurial Orientation (EO)

Cronbach's Alpha: 0.83	Corrected	Cronbach's Alpha
Total number of Items: 40	Item-Total Correlation	If Item Deleted
B1N1. We actively introduce improvements and innovations in our firm	0.217	0.831
B1N2. Our firm is creative in its methods of operation	0.239	0.831
B1N3. Our firm seeks out new ways of doing things	0.293	0.830
B1N4. In general we favor a strong emphasis on the marketing of tried-and-true products or services	0.243	0.831
B1N5. In our company, there exists a very strong emphasis on technological leadership and innovations	0.269	0.830
B1N6. Our firm has marketed very many new lines of products or services in the past five years (or since its establishment)	0.426	0.826
B1N7. In our firm, changes in product lines have usually been quite dramatic	0.309	0.829
BR1. The term "risk taker" is considered a positive attribute for people in our firm	0.309	0.829
BR2. People in our firm are encouraged to take calculated risks with new ideas	0.389	0.827
BR3. Our firm emphasizes both exploration and experimentation for opportunities	0.392	0.827
BR4. In general, the top managers of our firm have a strong proclivity for low-risk projects (with normal and certain rates of return)	0.233	0.833
BR5. Generally, the top managers of our firm have a strong proclivity for high-risk projects (with chances of very high returns)	0.342	0.828
BR6. In general, the top managers of our firm believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	0.457	0.825
BR7. Generally, the top managers of our firm believe that owing to the nature of the environment, bold, wide-ranging acts are	0.372	0.827

necessary to achieve the firm's objectives		
BR8. When confronted with decision-making situations involving uncertainty, our firm typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	0.207	0.834
BR9. When confronted with decision-making situations involving uncertainty, our firm typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities	0.380	0.828
BPA1. In our firm, we always try to take the initiative in every situation (e.g., against competitors, in projects when working with others)	0.313	0.829
BPA2. Our firm excels at identifying opportunities	0.391	0.827
BPA3. Our firm initiates actions to which other organizations respond	0.337	0.829
BPA4. In dealing with its competitors, our firm typically responds to actions which competitors initiate	0.294	0.829
BPA5. Our firm constantly seeks opportunities to improve our business performance	0.251	0.830
BPA6. Our firm continuously identifies future needs of customers	0.375	0.828
BPA7. Our firm continuously monitors market trends	0.328	0.829
BPA8. Our firm continuously seeks opportunities such as new market related to the present operation	0.284	0.830
BPA9. Our firm continuously seeks opportunities such as new customer related to the present operation	0.229	0.831
BPA10. Our firm adopts technological capabilities ahead of competitors	0.292	0.830
BPA11. Our firm markets new products ahead of competitors	0.404	0.827
BPA12. Our firm adopts creative methods of running business ahead of competitors	0.381	0.828
BCA1. Our firm adopts a price-cutting strategy to enhance competitive position	0.383	0.827
BCA2. In general, our firm takes a bold or aggressive approach when competing	0.406	0.827
BCA3. Our firm tries to undo and out-manoeuvre the competition as best as we can	0.302	0.829
BCA4. Our firm typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	0.430	0.825
BCA5. Our firm is copying the business practices of successful competitors to enhance competitive position	0.334	0.829
BCA6. Our firm is intensely competitive	0.453	0.825
BA1. Employees are permitted to act and think without interference in our firm	0.340	0.828
BA2. In our firm, employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks	0.311	0.829
BA3. Employees are given freedom and independence to decide on their own how to go about doing their work in our firm	0.214	0.833
BA4. Employees are given freedom to communicate without interference	0.264	0.830
BA5. Employees are given authority and responsibility to act alone if they think it to be in the best interests of the firm	0.387	0.827
BA6. In our firm, employees have access to all vital information	0.025	0.843

Source: Research data (2022)

4.6.3 Reliability Test for Transformational Leadership

Table 4.11 shows the overall Cronbach's *Alpha* for 24 items measuring transformational leadership as 0.88 which is at the acceptable range. Most items appear to be worthy of retention, resulting in a decrease in the alpha if deleted. However, deletion of item CE4 that stated "Will not settle for the second best" increased alpha to $\alpha = 0.89$.

Table 4.11: Reliability Test for Transformational Leadership (TL)

Cronbach's Alpha: 0.88	Corrected	Cronbach's Alpha
Total number of Items: 24	Item-Total Correlation	If Item Deleted
CV1. Has a clear understanding of where we (as a firm) are going	0.371	0.879
CV2. Paints an interesting picture of the future of our firm	0.318	0.880
CV3. Seeks always new opportunities for the firm	0.253	0.882
CV4. Inspires others with its plans for the future	0.245	0.882
CV5. Is able to get others committed to its dreams	0.446	0.877
CM1. Leads by "doing" rather than simply by "telling"	0.584	0.874
CM2. Provides a good model for the employees in our firm to follow	0.410	0.878
CM3. Leads by example	0.434	0.878
CG1. Fosters collaborating among work groups	0.582	0.874
CG2. Encourages employees to be "team players"	0.520	0.876
CG3. Gets the group to work together for the same goal	0.535	0.875
CG4. Develops a team attitude and spirit among employees	0.568	0.874
CE1. Makes it clear to the personnel in our firm that it expects to give 110 percent all the time	0.517	0.876
CE2. Encourages employees to be ambitious	0.266	0.881
CE3. Insists on only the best performance	0.273	0.882
CE4. Will not settle for the second best	0.225	0.892
CLB1. Acts with consideration the feelings of other employees in the firm	0.585	0.873
CLB2. Considers the personal feelings of the personnel before acting	0.581	0.873
CLB3. Shows respect for the personal feelings of the employees in our firm	0.568	0.874
CLB4. Treats employees with consideration of their personal feelings	0.544	0.874
C1S1. Challenges personnel in our firm to think about problems in new ways	0.605	0.873
C1S2. Asks questions that prompt our employees to think about the way they do things	0.589	0.874
C1S3. Stimulates to rethink the way employees in our firm do some things	0.601	0.873
C1S4. Has ideas that have challenged the personnel in our firm to reexamine some of our basic assumptions about work	0.592	0.873

Source: Research data (2022)

4.6.4 Reliability Test for Networking Capability

A reliability analysis test carried out on networking capability measuring scale comprising of 12 items produced Cronbach's *Alpha* of 0.91 as indicated in **Table 4.12**.

From the table there is no item that looks problematic considering the *Cronbach's Alpha if Item Deleted* column shows no improved change in the Cronbach's *Alpha* score if individual items were removed from the questionnaire. Hence, all the items should be retained since all of them have scores less than the overall alpha score and above the accepted range.

Table 4.12: Reliability Test for Networking Capability (NC)

Cronbach's Alpha: 0.91	Corrected	Cronbach's Alpha
Total number of Items: 12	Item-Total Correlation	If Item Deleted
DNP1. Our organisation has a system or mechanism in place to help us search locally to find proper network partners	0.507	0.907
DNP2. Our organisation has a system or mechanism in place to help us search globally to identify appropriate network partners	0.644	0.900
DNP3. Our organisation has a system or mechanism in place to help us search widely to look for suitable partner	0.706	0.897
DNP4. Our organisation has a system or mechanism in place to help us find partners to count on when the need arises	0.745	0.895
DMR1. Our organisation can design an appropriate mechanism to navigate the dynamics of the partner network	0.733	0.896
DMR2. Our organisation can fine-tune network partnership relationships	0.695	0.898
DMR3. Our organisation constantly analyses relationships with partners so that we know what adjustments to make	0.636	0.900
DMR4. Our organisation can dynamically integrate networking activities into our business operational process	0.719	0.897
DLR1. Our organisation can obtain the required assistance from our partners in an accurate manner	0.645	0.900
DLR2. Our organisation can obtain the required assistance from our partners in a timely manner	0.591	0.902
DLR3. Our partners can refer us to a third party who could help if the partners cannot provide direct help	0.620	0.902
DLR4. Our partners can share resources with us when we need it	0.460	0.909

Source: Research data (2022)

4.7 Factor Analysis

Prior to undertaking hypothesis testing, the factorability of the retained items were checked to find a limited number of elements that might be utilized to test the relationship between associated variables. The items for variables with dimensions that had initially been tested for reliability were examined to investigate the validity of each construct i.e. entrepreneurial orientation (39 items), transformational leadership (23 items) and networking capability (12 items) through scale purification process. Factor analysis achieved dimensionality reduction through omitting items with factor loadings less than 0.5 from the analyses to increase construct validity. A factor loading equal to or above 0.5 is considered sufficient since it portrays at least 20% overlap between variable and factor (Straub *et al.* 2004).

In this study, factor analysis was used to test construct validity, which is the degree to which a scale measures what it claims to measure (Souza *et al.* 2017). Factor analysis for entrepreneurial orientation, transformational leadership and networking capability was performed for each of the underlying dimensions given the broad scope for each construct to ease interpretability. The initial solutions for these factors were each examined using Varimax rotation of the factor loading matrix (Wee and Quazi, 2005). The rotation process attempted to maximize the sum of the variances of the squared loadings as all the coefficients will be to extreme or near zero, with few intermediate values. The intent of undertaking principal component analysis (PCA) was to identify and compute composite scores for the factors that underpin the study. **Tables 4.14 - 4.16** indicates the factor loading of each item for all the measured variables under each of the four distinct constructs sorted by size. Eigenvalues of above 1 was an indication of the

number of factors retained and that account for a reasonable proportion of variance explained. Moreover, the scree plots illustrated the plot of eigenvalues and number of factors generated.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy across the constructs were above the commonly recommended value of .7 which was adequate to persuade the researcher to undertake factor analysis (Glen, S. 2016). KMO values for entrepreneurial orientation, transformational leadership and networking capability were based on the underlying dimensions.

Table 4.13: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's test of sphericity

KEY CONSTRUCTS	KMO	BARTLETT'S TEST	
Entrepreneurial Orientation	0.754	Approx. Chi-Square	3069.30
		df	6
		Sig.	.000
Transformational Leadership	0.820	Approx. Chi-Square	2203.28
		df	8
		Sig.	.000
Networking Capability	0.911	Approx. Chi-Square	2553.02
		df	4
		Sig.	.000

df – Degrees of freedom

Sig. – 95% Significance level

Entrepreneurial orientation (EO) recorded a KMO value of .754 (**Table 4.13**).

The factor analysis extraction process was restricted to 6 components. The items with their respective factor loadings are shown in **Table 4.14**. All items were retained with the exception of 13 items which were dropped considering the items had factor loadings less than the recommended factor loading of .5 (Straub *et al.* 2004). Dropping these items retained 6 components (**Figure 4.1**) with eigenvalues above 1.0 which explained 56% of the cumulative variance (**Table 4.15**).

Table 4.14: Summary of Rotated Component Analysis for Entrepreneurial Orientation

Measured Items ^a	Component					
	1	2	3	4	5	6
In our firm, changes in product lines have usually been quite dramatic	.735					
In general, the top managers of our firm believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	.698					
Our firm adopts a price-cutting strategy to enhance competitive position	.694					
Our firm typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	.650					
In general, the top managers of our firm have a strong proclivity for low-risk projects (with normal and certain rates of return)	.649					
Employees are given authority and responsibility to act alone if they think it to be in the best interests of the firm	.540					
Our firm adopts technological capabilities ahead of competitors		.720				
Our firm adopts creative methods of running business ahead of competitors		.649				
Our firm markets new products ahead of competitors		.633				
Our firm continuously seeks opportunities such as new market related to the present operation		.617				
Our firm continuously seeks opportunities such as new customer related to the present operation		.609				
In our firm, we always try to take the initiative in every situation (e.g., against competitors, in projects when working with others)		.578				
In our company, there exists a very strong emphasis on technological leadership and innovations			.754			
he term "risk taker" is considered a positive attribute for people in our firm			.742			
People in our firm are encouraged to take calculated risks with new ideas			.689			
Our firm has marketed very many new lines of products or services in the past five years (or since its establishment)			.626			
Our firm emphasizes both exploration and experimentation for opportunities			.532			
Employees are permitted to act and think without interference in our firm				.830		
In our firm, employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks				.775		
Employees are given freedom and independence to decide on their own how to go about doing their work in our firm				.683		
Our firm continuously identifies future needs of customers					.728	
Our firm continuously monitors market trends					.680	
Our firm excels at identifying opportunities					.564	
Our firm is creative in its methods of operation						.826
Our firm seeks out new ways of doing things						.808
We actively introduce improvements and innovations in our firm						.630

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Table 4.15: Total Variance Explained for Entrepreneurial Orientation

Component	Eigenvalues	% of Variance Explained	Cumulative % of Variance Explained
1	4.639	17.844	17.844
2	2.817	10.833	28.677
3	2.171	8.348	37.025
4	1.836	7.061	44.086
5	1.603	6.165	50.251
6	1.543	5.935	56.185

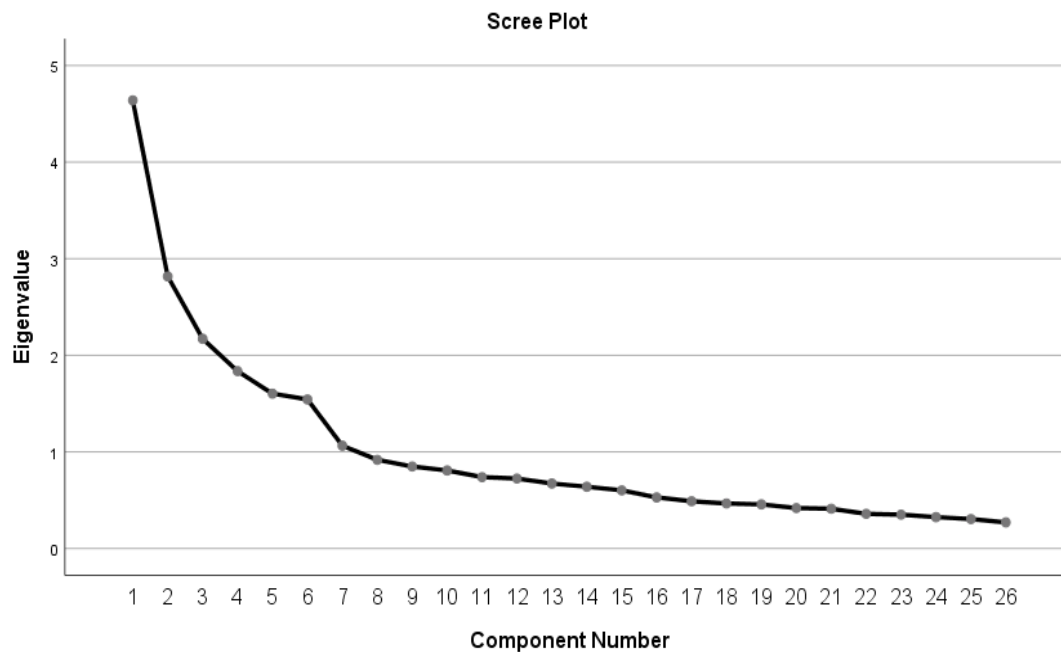


Figure 4.1: Scree plot for Entrepreneurial Orientation

On the other hand, transformational leadership (TL) registered KMO value of .82 (Table 4.13). Individual items having factor loadings above .5 are shown in Table 4.16 and loaded onto four components shown in Figure 4.2. All items measuring TL were retained except for 7 items that had factor loadings less than the recommended factor loading. The eigenvalues ranged between 1.22 and 4.64 which explained a cumulative variance of 61% (Table 4.17).

Table 4.16: Summary of Rotated Component Analysis for Transformational Leadership

Measured Items ^a	Component			
	1	2	3	4
Treats employees with consideration of their personal feelings	.836			
Considers the personal feelings of the personnel before acting	.817			
Acts with consideration the feelings of other employees in the firm	.813			
Shows respect for the personal feelings of the employees in our firm	.756			
Challenges personnel in our firm to think about problems in new ways	.557			
Fosters collaborating among work groups	.538			
Encourages employees to be ambitious		.768		
Leads by example		.751		
Encourages employees to be “team players”		.718		
Insists on only the best performance		.617		
Develops a team attitude and spirit among employees		.584		
Paints an interesting picture of the future of our firm			.800	
Provides a good model for the employees in our firm to follow			.694	
Has a clear understanding of where we (as a firm) are going			.600	
Seeks always new opportunities for the firm				.742
Inspires others with its plans for the future				.735

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 6 iterations.

Table 4.17: Total Variance Explained for Transformational Leadership

Component	Eigenvalues	% of Variance Explained	Cumulative % of Variance Explained
1	4.644	29.026	29.026
2	2.313	14.454	43.481
3	1.535	9.592	53.072
4	1.217	7.609	60.681

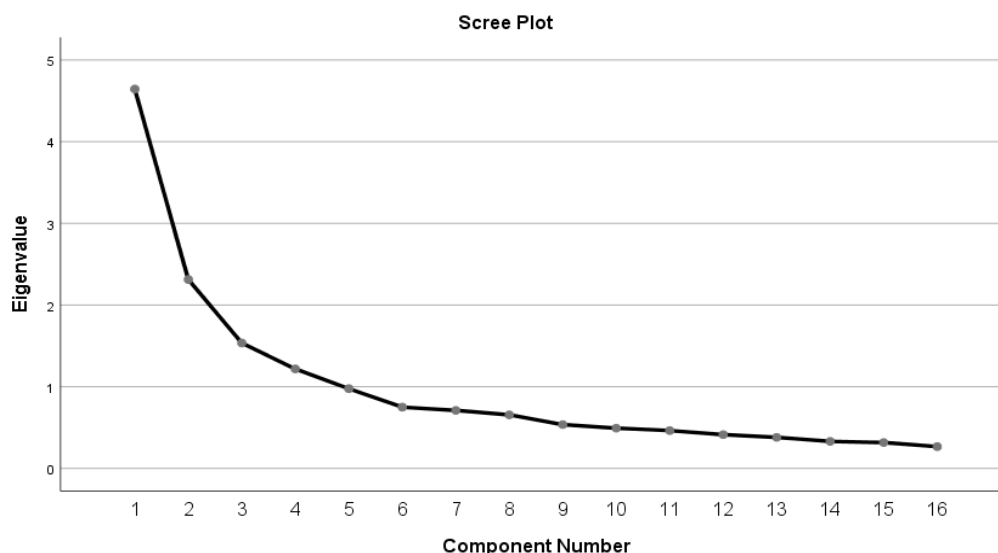


Figure 4.2: Scree plot for Transformational Leadership

Finally, networking capability (NC) as a fourth construct recorded a KMO value of .911 (Table 4.13). All items measuring NC were retained with factor loadings of .5 and above (Table 4.18) and loaded onto two components explaining 62% of the total variance (Table 4.19) with eigenvalues ranging between 1.37 and 6.09 (Figures 4.3).

Table 4.18: Summary of Rotated Component Analysis for Networking Capability

Measured Items ^a	Component	
	1	2
Our organisation can obtain the required assistance from our partners in an accurate manner	.749	
Our partners can share resources with us when we need it	.748	
Our organisation constantly analyses relationships with partners so that we know what adjustments to make	.720	
Our partners can refer us to a third party who could help if the partners cannot provide direct help	.712	
Our organisation can fine-tune network partnership relationships	.670	
Our organisation has a system or mechanism in place to help us search widely to look for suitable partner	.599	
Our organisation can obtain the required assistance from our partners in a timely manner	.552	
Our organisation has a system or mechanism in place to help us search locally to find proper network partners		.871
Our organisation has a system or mechanism in place to help us search globally to identify appropriate network partners		.871
Our organisation has a system or mechanism in place to help us find partners to count on when the need arises		.681
Our organisation can design an appropriate mechanism to navigate the dynamics of the partner network		.643
Our organisation can dynamically integrate networking activities into our business operational process		.561

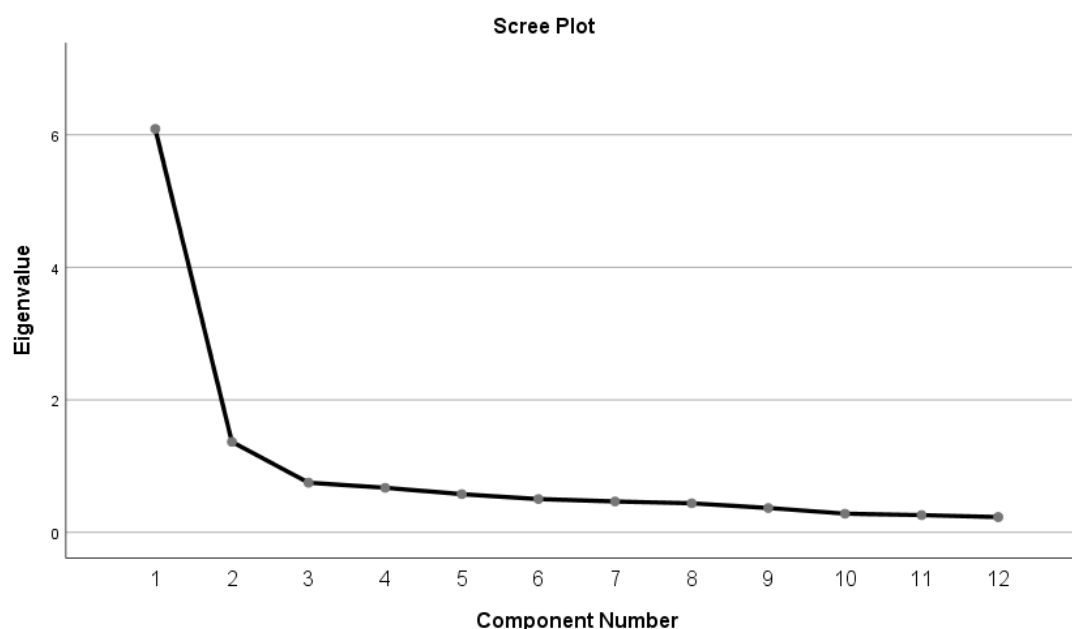
Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table 4.19: Total Variance Explained for Networking Capability

Component	Eigenvalues	% of Variance Explained	Cumulative % of Variance Explained
1	6.089	50.745	50.745
2	1.366	11.385	62.130

**Figure 4.3: Scree plot for Networking Capability**

On the other hand, Bartlett's test of sphericity was statistically significant at 95% significance level across all three constructs (**Table 4.13**). For entrepreneurial orientation, the five dimensions making up the construct recorded significant Bartlett's test of sphericity with *Chi-square* of 3069.306, at $df = 325$ and a *significant level* of $p = .000$. Regarding transformational leadership, the six dimensions making up the construct registered significant Bartlett's test of sphericity with *Chi-square* of 2203.288, at $df = 120$ and a *significant level* of $p = .000$. Lastly, for networking capability, the three dimensions accounting for the construct recorded significant Bartlett's test of sphericity with *Chi-square* of 2553.024, at $df = 66$ and a *significant level* of $p = .000$.

Finally, the communalities recorded across the four main constructs for EP, EO, TL and NC were all above .3, which is the recommended limit as a measure of the variability explained by the measured variables in each factor for exploratory factor analysis (Tabachnick and Fidell, 2007). Communalities depict the proportion of variation in the original variable which is accounted for by the high loading factors.

4.8 Reliability after Factor Analysis

Following deletion of all items that did not fulfill the required criteria, a reliability test was performed on the items that were retained. **Table 4.20** shows the composite results of the study variables and overall reliability of the remaining 63 items categorized into four distinct groups i.e. firm performance (9 items), entrepreneurial orientation (26 items), networking capability (12 items) and transformational leadership (16 items) and indicating Cronbach's alpha values of 0.75, 0.72, 0.91 and 0.78 which were all higher than 0.70 meaning all the retained questionnaire items were acceptable for the study.

Table 4.20: Reliability Results after Factor Analysis

Construct	Number of items Before FA	Cronbach's alpha Before FA	Number of items After FA	Cronbach's alpha After FA
Firm Performance	9	0.75	9	0.75
Entrepreneurial Orientation	40	0.83	26	0.72
Networking Capability	12	0.91	12	0.91
Transformational Leadership	24	0.88	16	0.78
Overall items and their Reliability	85	0.93	63	0.79

FA: Factor Analysis

Source: Research data (2022)

4.9 Data Transformation

The data for firm age and firm size both had skewed distributions due to extreme values either pertaining to the firms established long in the past while other firms were established more recently. Similarly, some firms had a high employee population compared to other firms with very low employee numbers. Therefore, the researcher performed log-transformation for both co-variables (firm age and firm size) for the skewed data to approximately conform to normality. The log-transformed data for both co-variables followed a normal or a near normal symmetrical distribution, which was used for further analysis. Furthermore, following component factor analysis, the remaining items that satisfied the required criteria by loading on one of the four main constructs as intended by the study were transformed to average scores. The four distinct variables (i.e. FP, EO, TL and NC) were measured by multiple items, hence it was necessary to obtain the average score of the multiple items measuring each variable.

Firm performance which was the dependent variable had all the 9 items retained $(AP1+ AP2+ AP3+ AP4+ AP5+ AP6+ AP7+ AP8+ AP9)/9$. The second variable, entrepreneurial orientation which was considered an independent variable in the study had 26 items retained following factor analysis made up of five dimensions $(B1N1+ B1N2+ B1N3 + B1N5+ B1N6+ B1N7+ BR1+ BR2+ BR3+ BR4+ BR6+ BPA1+ BPA2+ BPA6+ BPA7+ BPA8+ BPA9+ BPA10+ BPA11+ BPA12+ BCA1+ BCA4+ BA1+ BA2+ BA3 + BA5)/26$. Networking capability, the mediating variable had all the 12 items retained after factor analysis encompassing three dimensions $(DNP1+ DNP2+ DNP3+ DNP4+ DMR1+ DMR2+ DMR3+ DMR4+ DLR1+ DLR2+ DLR3+ DLR4)/12$. Lastly, the moderating variable, transformational leadership had 16 items retained following

factor analysis that constituted six dimensions (CV1+ CV2+ CV3+ CV4+ CM2+ CM3+ CG1+ CG2+ CG4+ CE2+ CE3+ CLB1+ CLB2+ CLB3+ CLB4+ C1S1)/16. These overall mean scores were further standardized using z-transformation. The z-transformations converted the separate distributions for each of the variables into standardized distributions. Therefore, the z-scores for the four variables (FP, EO, TL and NC) were subsequently used to perform correlation and multivariate regression analysis.

4.10 Descriptive Statistics for Study Constructs

Summary statistics for the study variables shown in **Table 4.21** following data transformation indicated that all variables had a composite mean score of above 5.91. Findings showed that transformational leadership had the highest mean of 6.05 and standard deviation of .43 (Skewness = -1.21 and Kurtosis = 5.09) with responses ranging from 4.00 to 7.00 on 7-point Likert scale. This depicted that most respondents had a converging opinion on statements regarding transformational leadership. Further findings showed respondents' agreement with statements describing networking capability with a composite mean of 5.90 and SD = .60 with responses ranging from 2.58 to 7.00 (Skewness = -1.90, Kurtosis = 9.72). Firm performance followed with a composite mean of 5.86 and a standard deviation of .35. The responses for this variable ranged from 3.78 to 6.78 (Skewness = -2.26, Kurtosis = -12.55). Finally, respondents agreed on statements describing entrepreneurial orientation with a composite mean of 5.83 and SD = .37 (Skewness = -1.38, Kurtosis = 5.39) with responses ranging from 3.92 to 6.85. Hair *et al.* 2010 and Bryne (2010) argue that data is considered to be normally distributed if skewness lies between -2 to +2 and kurtosis is between -7 to +7. However, since the study used PROCESS Macro with 5000 bootstrapping,

non-normality was not an issue as the data were resampled severally (Frey, 2018).

Table 4.21: Summary of the Descriptive Statistics for the Study Constructs

Variables Name	N	Range	Min*	Max*	Mean	SD	SK	KS
Firm Performance	9	3.00	3.78	6.78	5.86	.35	-2.26	12.55
Entrepreneurial Orientation	26	2.92	3.92	6.85	5.83	.37	-1.38	5.39
Networking Capability	12	4.42	2.58	7.00	5.90	.60	-1.90	9.72
Transformational Leadership	16	3.00	4.00	7.00	6.05	.43	-1.21	5.09

Source: Research data (2022), N= 400 *Seven-point Likert scale: 7= Strongly Agree to 1= Strongly Disagree, M = Mean, SD = Standard Deviation, SK = Skewness, KS = Kurtosis

4.11 Analysis of Outliers

Prior to undertaking further analysis, it was vital to assess the data for any outliers. This study identified 6 cases of multivariate influential outliers through *Mahalanobis distance (MD)* greater than the critical χ^2 value of 20.52, where $p < .001$ and $df = 5$ (Aguinis *et al.* 2013). The degrees of freedom characterized the number of variables against the dependent variable. Further analysis of the 6 identified outliers using *Cook's distance (D_i)* was undertaken to determine whether the outliers were influential to the extent of negatively affecting the regression models. The assumption was that a large D_i value of more than 0.5 would indicate an influential value, which should be considered for removal from the dataset as an influential outlier (Cook, 1977). However, the 6 identified outliers had D_i values of less than 0.5, hence did not require the researcher to exclude them from the dataset. Therefore, analysis was undertaken using the complete dataset ($n = 400$) since analysis using the set of data without outliers ($n = 394$) produced varied regression results by indicating differentiated R^2 , adjusted R^2 and parameter estimates (**appendix VIII**). Findings derived from the complete dataset ($n = 400$) are presented in the respective tables and inferences were made based on the complete dataset.

4.12 Testing Assumptions for Regression Analysis

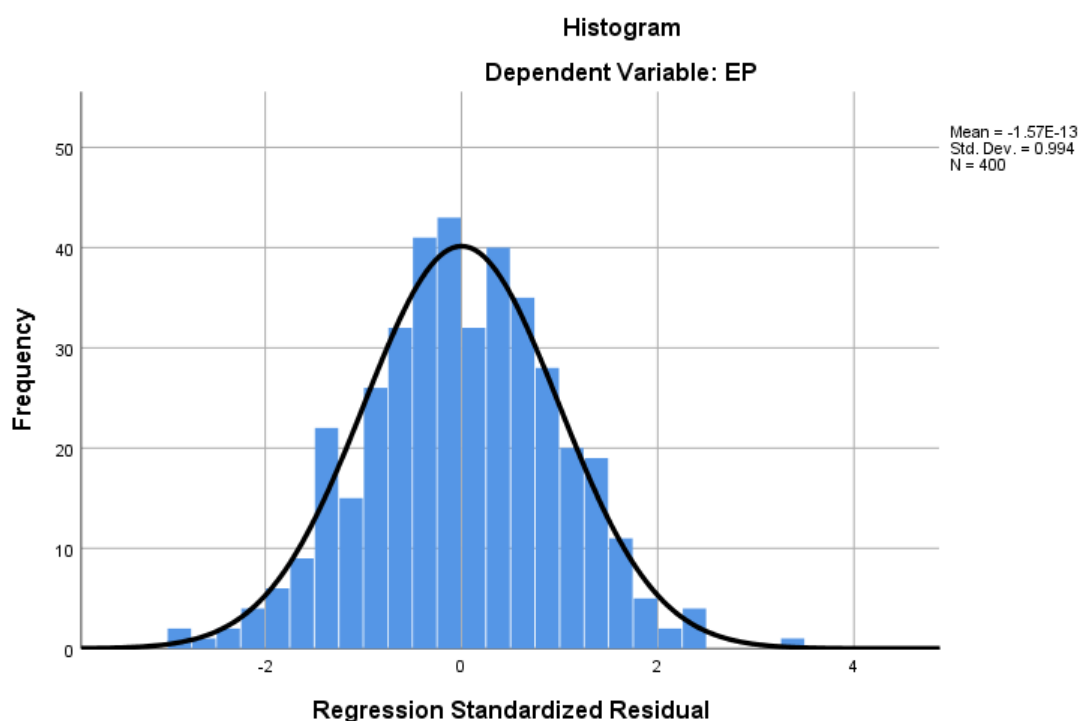
Prior to undertaking further analysis, various assumptions for a regression model were tested. This was a critical phase of analysis since meeting relevant assumptions meant that the results will be trustworthy with minimized chances of committing Type I or Type II errors and obtaining accurate estimations of significance and effect sizes (Osborne & Waters, 2002). The assumptions of multiple regression include the assumptions of normality, linearity, homoscedasticity, absence of multi-collinearity and data independence (Osborne & Waters, 2002; Stevens, 2009).

4.12.1 Test for Normality Assumption

The assumption of normality is that the underlying residuals are normally distributed, or nearly so (Stevens, 2009; Tabachnick & Fidell, 2006). Insignificant p-values of the Shapiro-Wilk test for unstandardized ($p = .980$) residuals indicated that the normality assumption was met (**Table 4.22**). Additionally, the normality assumption was examined using a histogram shown in **Figure 4.4** which illustrates the data's form and spread of distribution. When the regression assumption is met and the error terms are normally distributed, the histogram of standardized residuals should exhibit a fairly normal curve (Garson, 2012). This study utilized PROCESS Macro that uses bootstrapping which does not require a normal distribution in the data (Hayes, 2022) with 5000 number of bootstrap samples. Bootstrapping is a resampling technique for estimating the variability in a statistic by sampling with replacement from observed data. As a result, regardless of the underlying distribution, we can consistently generate credible intervals for the sampling distribution (Frey, 2018).

Table 4.22: Test for Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.020	400	.200	.998	400	.980
Standardized Residual	.020	400	.200	.998	400	.980
Studentized Residual	.021	400	.200	.998	400	.980

**Figure 4.4: Histogram of normality test**

4.12.2 Test for Linearity Assumption

The second test to be tested was the assumption of linearity. The conventional multiple regression can only accurately assess the link between outcome and predictor variables if the relationship is linear in form (Stevens, 2009; Tabachnick & Fidell, 2006; Kivilu, 2003; Hox, 1995; Osborne & Waters, 2002). The linearity assumption was tested in this study by inspecting the normality predicted probability (P-P) plot of the scores represented by a straight line. As shown in

Figure 4.5, the plotted scores fall along the diagonal line and form an approximate straight line indicating that the theory of linearity has been met.

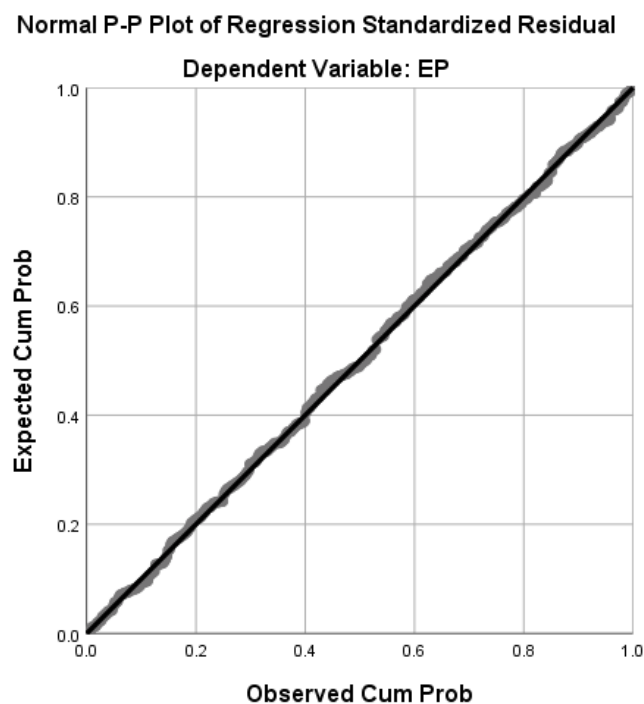


Figure 4.5: Linearity plot

4.12.3 Test for Homoscedasticity Assumption

The term "homoscedasticity" alludes to the notion that the relationship under investigation is the same over the whole range of the dependent variable (Osborne & Waters, 2002; Stevens, 2009). Higher errors (residuals) in some portions of the range compared to others indicate the absence of homoscedasticity. The residuals will create a pattern-less cloud of dots if the homoscedasticity assumption is met, with majority of the residuals plotted between -2 and/or +2 points (Garson, 2012). The graph shown in **Figure 4.6** is a data plot of standardized residuals against standardized predicted values, which revealed no noticeable funneling with most of the residuals within the required threshold. This implied that the homoscedasticity assumption was met. Furthermore, Levene's test was used to

test the assumption for homogeneity of variances by assessing whether the variance of the dependent variable (EP) is equal across the independent variables (EO, NC and TL). Based on the test we fail to reject the null hypothesis of equal variances given that the outcomes are statistically insignificant with $p > .05$, using either the mean or median across all variables (**Table 4.23**). This was further proof that the homoscedasticity assumption was met.

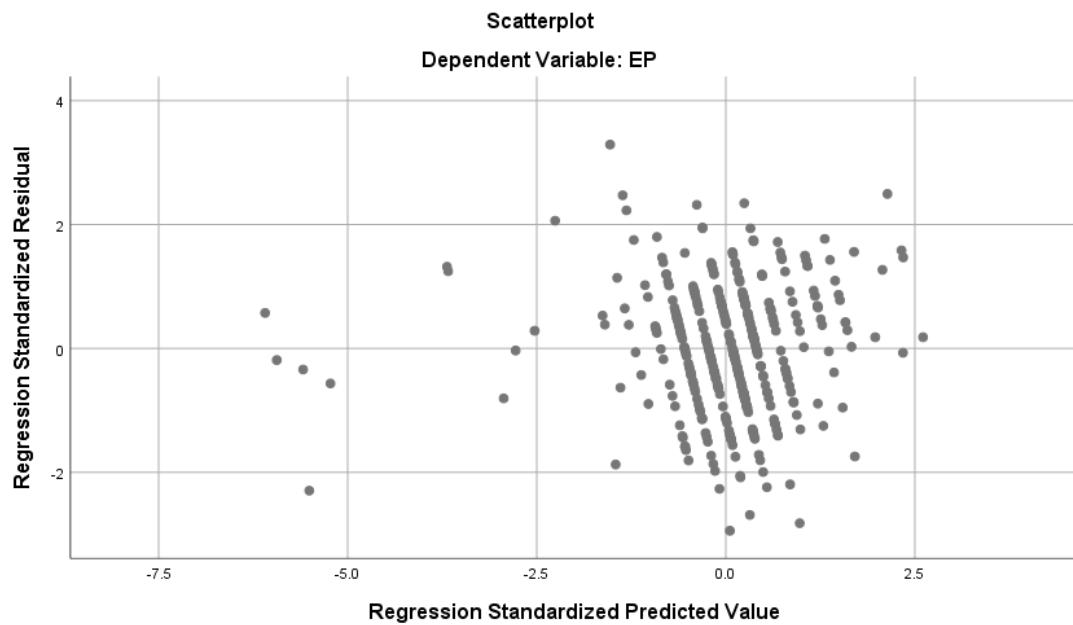


Figure 4.6: Plot for Homoscedasticity Test

Table 4.23. Test for Equality of Variance

		Test of Homogeneity of Variances			
		Levene	df1	df2	Sig.
		Statistic			
EO	Based on Mean	1.571	16	378	.074
	Based on Median	1.019	16	378	.436
	Based on Median and with adjusted df	1.019	16	296.500	.436
	Based on trimmed mean	1.479	16	378	.104
TL	Based on Mean	1.252	16	378	.226
	Based on Median	1.212	16	378	.255
	Based on Median and with adjusted df	1.212	16	343.123	.256
	Based on trimmed mean	1.269	16	378	.214
NC	Based on Mean	1.682	16	378	.048
	Based on Median	1.468	16	378	.108
	Based on Median and with adjusted df	1.468	16	339.485	.109
	Based on trimmed mean	1.680	16	378	.048

4.12.4 Testing for Multi-collinearity

Multi-collinearity refers to the ability of one predictor variable in a multiple regression model to be predicted linearly from the others with a high degree of accuracy. When several independent variables in a model are correlated, this phenomenon occurs (Saunders *et al.*, 2009; Chatterjee & Hadi 2012). Collinearity diagnostics results were used to test multi-collinearity by looking at the tolerance index and Variance Inflation Factor (VIF) regression results. Garson (2012) states that if the tolerance index is less than the cutoff value of .20, the independent variable should be excluded from the analysis due to multi-collinearity. On the other hand, the conventional rule dictates that multi-collinearity is an issue when $VIF > 4.0$. **Table 4.24** shows that the tolerance index range for all variables was between .52 and .63, which is much greater than .20, and the VIF ranges from 1.59 to 1.89 which is acceptable since the values are below 4.0. Results for both tolerance index and VIF show that multi-collinearity does not exist in this study.

Table 4.24: Variance Inflation Factor (VIF) and Tolerance

Predictor Variables	Unstd. Coeff		Std. Coeff	<i>t</i>	Sig.	Collinearity Statistics	
	B	SE				Tolerance	VIF
(Constant)	.200	.06		3.19	.001		
Entrepreneurial Orientation	.45	.01	.47	37.3	.000	.63	1.59
Networking Capability	.18	.01	.31	22.6	.000	.52	1.93
Transformational Leadership	.31	.01	.38	27.41	.000	.53	1.89

Dependent Variable: Firm performance; **SE:** Standard Error; **Unstd.:** Unstandardized; **Std.:** Standardized; **Coeff:** Coefficient
Source: Research data (2022)

4.12.5 Test for Data Independence

Independence in a dataset is ascertained when the value of one observation does not influence the value of other observations. The residual terms are assumed to be independent suggesting that the distribution of errors is random and not influenced or associated with prior observation errors. The Durbin-Watson statistic, which should range between 1.5 and 2.5 for independent observations, was used to test this assumption (Garson, 2012; Stevens 2009). **Table 4.25** indicates the Durbin-Watson test statistic = 1.74, which suggests the assumption for data independence was met.

Table 4.25: Data Independence

Model	R	Model Summary			Durbin-Watson
		R Square	Adjusted R Square	Std. Error of Estimate	
4	.98	.96	.96	.07	1.74

Source: Research data (2022)

4.13 Correlation Analysis

The term "correlation" refers to the relationship between two or more quantitative variables. Furthermore, correlation analysis determines the strength or degree of the relationship between the variables as well as the direction of the relationship. In this study, Pearson's correlation coefficient was utilized to examine the relationship between firm performance and three other variables: entrepreneurial orientation, transformational leadership, and networking capability. The coefficient's value ranges from -1 to +1, indicating whether there is a positive or negative association.

Findings shown in **Table 4.26** illustrate the study's correlation tests, which reveal that all variables positively correlate with firm performance. The highest positive correlation was the relationship between firm performance and entrepreneurial orientation with $r = .84$, $p < .01$, followed by firm performance and transformational leadership with $r = .83$, $p < .01$, while the correlation between entrepreneurial orientation and networking capability and between entrepreneurial orientation and transformational leadership both had equal but the lowest positive correlations of $r = .53$, $p < .01$.

Table 4.26: Pearson Correlation Coefficients

Variable (N = 400)	FP	EO	NC	TL
Firm Performance	1			
Entrepreneurial Orientation	.84**	1		
Networking Capability	.80**	.53**	1	
Transformational Leadership	.83**	.53**	.64**	1

Source: Research data (2022), ** Correlation is significant at $p < .01$ (2-tailed)

4.14 Hypothesis Testing

This study used hierarchical multiple regression models to evaluate the effect of covariates in the study and all direct effect hypotheses, as well as path analysis (mediation analysis) to show causal analysis and Hayes (2022) Model 59 for moderation and moderated mediation hypotheses. All models utilized results from the complete dataset which were tabulated and reported. Furthermore, interpretations of the hypothesis tests and inferences were made based on findings from the complete dataset.

4.14.1 Effect of the Covariates

Before testing for the direct effect hypotheses, the researcher sought to examine the effect of the covariates in this study. Results from **Table 4.27** (Model 1) shows study findings of the covariates regressed on firm performance. The study shows that both firm age and firm size fail to significantly predict the outcome variable with $\beta = .15, p = .558$ and $\beta = .18, p = .175$ respectively. Findings shows that the model explains less than one percent of the total variance in firm performance with $R^2.015$ which is statistically insignificant with $F(2, 397) = 2.97, p = .052$.

4.14.2 Effect of Entrepreneurial Orientation on Firm Performance (H_{01})

H₀₁: predicted that there is no significant direct effect of Entrepreneurial orientation on Firm performance among manufacturing firms. However, findings for the first hypothesis are shown in Table 4.27 (Models 2) that indicate inclusion of the independent variable in the first model to test the direct effect of entrepreneurial orientation on firm performance while controlling for firm age and firm size. Results show that firm age has a significant effect ($p = .04$) on firm performance. However, firm size has an insignificant effect ($p = .06$) on the outcome variable. The findings further show that entrepreneurial orientation has a significant direct effect on firm

performance with $\beta = .85$, $p < .001$ with $R^2.71$, and $\Delta R^2.69$, $F(3,396) = 321.77$, $p < .001$. This implies that controlling for the covariates, entrepreneurial orientation explains 71% of the total variance in firm performance. Based on these results, **Hypothesis H₀₁** is rejected meaning that the study met its first objective which was to analyze the effect of entrepreneurial orientation on the performance of manufacturing firms.

4.14.3 Effect of Networking Capability on Firm performance (H₀₂)

H₀₂: predicted that there is no significant direct effect of networking capability on Firm performance. The second hypothesis postulated that networking capability has no significant direct effect on firm performance. Models 3 shown in **Table 4.27**, indicate results of the hypothesis while controlling for the covariates and entrepreneurial orientation. The findings reveal that that firm age has a significant effect ($p = .02$) on firm performance while firm size has no significant effect ($p = .48$) on the outcome. However, entrepreneurial orientation and networking capability significantly and positively predict firm performance with $\beta = .56$, $p < .001$ and $\beta = .50$, $p < .001$ respectively, with $R^2.87$ and $\Delta R^2.18$, with a statistically significant $F(4,395) = 767.07$, $p < .001$. This implies that the model explains 87% of the total variance in firm performance. Additionally, R-square change of .18 implies that networking capability explains 18% of the total variations in firm performance while holding all covariates and entrepreneurial orientation constant. Based on the aforementioned findings, **Hypothesis H₀₂** is rejected by the study. This implies that the study met its second objective which was to ascertain the effect of networking capability on firm performance.

4.14.4 Effect of Transformational Leadership on Firm performance (H₀₃)

H₀₃: predicted that there is no significant direct effect of transformational leadership on firm performance. The third hypothesis of the study sought to examine the effect of transformational leadership on firm performance while controlling for covariates, entrepreneurial orientation and networking capability. The findings in Models 4 (Table 4.27) reveal that both firm age and firm size had insignificant effects on firm performance with $\beta = .07, p = .14$ and $\beta = .02, p = .49$ respectively. However, findings show that entrepreneurial orientation had a significant effect on firm performance with parameter estimates showing $\beta = .47, p < .001$. Further findings showed that networking capability and transformational leadership were both significant predictors of the outcome variable with $\beta = .31, p < .001$ and $\beta = .38, p < .001$ respectively, with $R^2 .96$ and $\Delta R^2 .08$, with a statistically significant $F(5,394) = 1929.08, p < .001$. The R^2 change indicates that controlling for all other variables in the model, transformational leadership as a moderating variable accounts for 8% of the total variance in firm performance. Based on the findings discussed above, **Hypothesis H₀₃** is rejected by the study.

Table 4.27: Results for Covariates and Direct Effects Hypotheses (H₀₁, H₀₂ & H₀₃)

Predictor Variables	Model 1 (FP)	Model 2 (FP)	Model 3 (FP)	Model 4 (FP)
	β	β	β	β
(Cons)	-.63	-.09	-.36	-.15
FA	.15	.28*	.19*	.07
FS	.18	-.13	.03	.02
EO	-	.85***	.56***	.47***
NC	-	-	.50***	.31***
TL	-	-	-	.38***
R²	.015	.71	.87	.96
ΔR^2	.015	.69	.18	.08
F	2.97	321.77***	767.07***	1929.08***

Source: Research data (2022). NB: * $p < .05$, ** $p < .01$, *** $p < .001$

Where;

(Cons) = Constant

β = unstandardized parameter of estimates coefficients

FA= Firm Age, FS = Firm Size

FP = Firm performance

EO = Entrepreneurial Orientation

NC = Networking Capability

TL = Transformational Leadership

4.14.5 Effect of Entrepreneurial orientation on Networking capability (H₀₄)

H₀₄: predicted that there is no significant direct effect of entrepreneurial orientation on networking capability. The fourth hypothesis postulated that entrepreneurial orientation has no direct effect on networking capability. Findings from the first model (Model 1) shown in **Table 4.28** indicate that both firm age and firm size had no significant effects on networking capability with $\beta = .09, p = .72$ and $\beta = -.13, p = .34$ respectively. In the second model (Model 2), study findings reveal that the only significant co-variate was firm size ($p = .003$). Further findings indicated that entrepreneurial orientation had a statistically significant direct effect on networking capability with $\beta = .56, p < .001, R^2.30, \Delta R^2.30$, with a significant $F(3,396) = 57.73, p < .001$. Therefore, this second model explained 30% of the total variance in networking capability and the R^2 change of 30% indicates the proportion of variance in networking capability accounted for by entrepreneurial orientation. Based on these results, **Hypothesis H₀₄** is rejected by the study.

Table 4.28: Results for Entrepreneurial Orientation on Networking Capability (H₀₄)

Predictor Variables	Model 1 (NC)		Model 2 (NC)	
	β	t	β	t
(Cons)	.17	.61	.53	2.25
FA	.09	.36	.18	.87
FS	-.13	-.96	-.33**	-3.00
EO	-	-	.56***	13.10
R^2	.003		.30	
ΔR^2	.003		.30	
F	5.41		57.73***	

Source: Research data (2022). NB: * $p < .05$, ** $p < .01$, *** $p < .001$

Where;

(Cons) = Constant

β = unstandardized parameter of estimates coefficients

t = t-statistic

FA= Firm Age, FS = Firm Size

EO = Entrepreneurial Orientation

NC = Networking Capability

4.14.6 Testing for the Mediating Effect of Networking Capability on the Relationship between Entrepreneurial Orientation and Firm performance (H₀₅)

H₀₅: predicted that there is no mediating effect of networking capability on the relationship between entrepreneurial orientation and firm performance. To address the fifth hypothesis, the study adopted a four-step procedure postulated by MacKinnon (2012), in addition to a fifth step representing total effects, which tested all the direct and mediating effects. The procedure required that the following conditions are met;

- Step 1:** A significant association between entrepreneurial orientation and networking capability represented by equation $M = a_1X + \varepsilon$ (side a_1 of the conceptual framework)
- Step 2:** A significant association between networking capability and firm performance represented by equation $Y = b_1M + \varepsilon$ (side b_1 of the conceptual framework)
- Step 3:** Testing the association between entrepreneurial orientation and firm performance while controlling for networking capability represented by equation $Y = b_1M + C'X + \varepsilon$ (side C' of the conceptual framework. However, this does not need to be significant for mediation to take place).
- Step 4:** A significant coefficient for the indirect path between entrepreneurial orientation and firm performance via networking capability (The product of $a_1 \times b_1$ or $C - C'$). The bias-corrected percentile bootstrap method determines whether the last condition is satisfied (**H₀₅**).
- Step 5:** The total effect (C) is represented by equation $Y = C X + \varepsilon = (a_1 \times b_1) + C'$. In all the analyses, the study included firm age and firm size as covariates.

The researcher undertook multiple regression analysis using Hayes (2022) PROCESS Macro Version 4.0 (Model 4). Findings in the first step (Model 1) showed that firm size had a significant effect on the outcome variable with $\beta = -.33, p = .003$ (**Table 4.29**). Further, entrepreneurial orientation had a significant direct effect on networking capability with $\beta = .56, p < .001, R^2 .30$, with a significant $F(3,396) = 57.73, p < .001$, hence confirming the first step of testing mediation effects. This implies that the model explains 30% of the total variance in networking capability.

In the second step, the study examined whether networking capability has a direct effect on firm performance (**Table 4.29**). Findings in Model 2 indicate that the only significant co-variate was firm age with $\beta = .19, p = .023$. Moreover, the study established that networking capability positively and significantly predicts firm performance with $\beta = .50, p < .001, R^2 = .89$ which had a significant $F(4,395) = 767.07, p < .001$. Therefore, this model explains 89% of the variability in firm performance. To determine the results for the third step, “effect of entrepreneurial orientation on firm performance, while controlling for networking capability”, the same Model 2 was used. Findings indicated that entrepreneurial orientation had a significant direct effect on firm performance with $\beta = .56, p < .001$. Thus, step three is further confirmed.

Lastly, to confirm the fourth step (Model 3), steps postulated by Zhao *et al.*, (2010) for assessing mediation were adopted and the study found the mean indirect effect from the bias-corrected percentile bootstrap analysis as positive and significant indicating $M3 = (a_1 \times b_1) = .56 \times .50 = .28, SE = .05, 95\% CI = [.17, .37]$, which was significant with the confidence interval (CI) not straddling a zero as shown in the mediation column (**Table 4.29**). The direct effect C' (.56) is significant while holding constant networking capability. Hence, $a_1 \times b_1 \times C' = .56 \times .50 \times .56 = .16$ gives a positive result indicating partial mediation (Since C' and $(a_1 \times b_1)$ are significant). These means that the two paths, [direct (C') + indirect effect ($M3$)] both contribute to the total effect; $C' + (a_2 \times b_2) = .56 + .28 = .84$ with the model explaining 71% ($R^2 = .71$) of the total variance which is significant with $F(3,396) = 321.77, p < .001$. From the above results, there is significant evidence that the confidence intervals for the indirect effect is non-inclusive of zero, thus confirming the presence of mediation effect. Hence, **Hypothesis H₀₅** is rejected by the study meaning that the study met its fifth objective.

Table 4.29: Results for Mediation and Total Effect (H₀₅)-Appendix VI

Variable names	Model 1	Model 2	Mediation	Total Effect
	a_1 (NC)	C' & b_1 (FP)	Model 3 $a_i \times b_i$	Model 4 $C = C' + (a_1 \times b_1)$ (FP)
	β	β		β
(Cons)	.53	-.36	$M3 = a_1 \times b_1$	-.09
FA	.18	.19*	$.56 \times .50 = .28$.28*
FS	-.33**	.03	$CI_{M3} = [.17,.37]$	-.13
EO	$a_1.56^{***}$	$C'.56^{***}$.84***
NC	-	$b_1.50^{***}$		-
R²	.30	.89		.71
F	57.73***	767.07***		321.77***

Source: Research (2022). Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Where;

FA = Firm Age

FS = Firm Size

EO = Entrepreneurial Orientation

NC = Networking Capability

FP = Firm performance

CI = Confidence intervals

β = Unstandardized parameter estimates coefficients

a_1 – Path (NC <---EO)

b_1 – Path (EP <---NC)

C' – Path (EP <---EO)

Model 1: To determine the effect of Entrepreneurial Orientation on Networking Capability in equation (NC= $a_0 + C + a_1EO + \epsilon$)

Where;

NC= Networking Capability

EO= Entrepreneurial Orientation

a_0 = Intercept/Constant

C= Co-variate/s

ϵ = Error term

Model 2: To determine the effect of Networking Capability on Firm performance in

equation ($EP = b_0 + C + b_1 NC + \epsilon$)

Where;

FP= Firm performance

NC= Networking Capability

b_0 = Intercept/Constant

C= Co-variate/s

ϵ = Error term

Model 3: To determine the mediating effect

Where;

$(a_1 \times b_1)$ = Mediation effect

CI_{M3} = Confidence Intervals for testing level of significance

Model 4: To determine the total effect ($EP = C EO + \epsilon = (a_1 \times b_1) + C'$)

Where;

FP= Firm performance

EO= Entrepreneurial Orientation

ϵ = Error term

C' = Direct Effect (EP \leftarrow EO)

C = Total Effect

4.14.7 The Moderating Effect of Transformational Leadership on the Relationship between Entrepreneurial Orientation and Networking Capability (H₀₆)

H₀₆: predicted that there is no moderating effect of transformational leadership on the relationship between entrepreneurial orientation and networking capability. The study adopted Hayes (2022) Model 59 to test the sixth hypothesis. Results in **Table 4.30**, shows the conditional process analysis of the study using PROCESS Macro Version 4.0. In the first multivariate regression analysis (Model 1) the researcher tested whether transformational leadership moderates the relationship between entrepreneurial orientation and networking capability (depicted as path “ a_1 ” in **Figure** of the conceptual framework). Findings indicated that firm size was the only statistically significant covariate with $\beta = -.28$, $p = .001$. Findings further showed that entrepreneurial orientation and transformational leadership had significant effects on networking capability with $\beta = .22$, $p < .001$, and $\beta = .36$, $p < .001$ respectively with $R^2 .56$ which was significant with $F(5,394) = 99.80$, $p < .001$ which implies that the model explains 56% of the variability in networking capability. Furthermore, results showed that transformational leadership had a moderating effect on the relationship between entrepreneurial orientation and networking capability, with the interaction results found to be significant with $\beta = -.13$, $p < .001$. Therefore, based on these findings, **Hypothesis H₀₆** is rejected by the study.

The above results are further illustrated and explained by **Figure 4.7**, which reveals that at low levels of entrepreneurial orientation, networking capability is higher for

the firms with high levels of transformational leadership than those with low levels of TL. However, as entrepreneurial orientation increases, networking capability decreases for firms with higher levels of TL compared to firms with lower levels of TL.

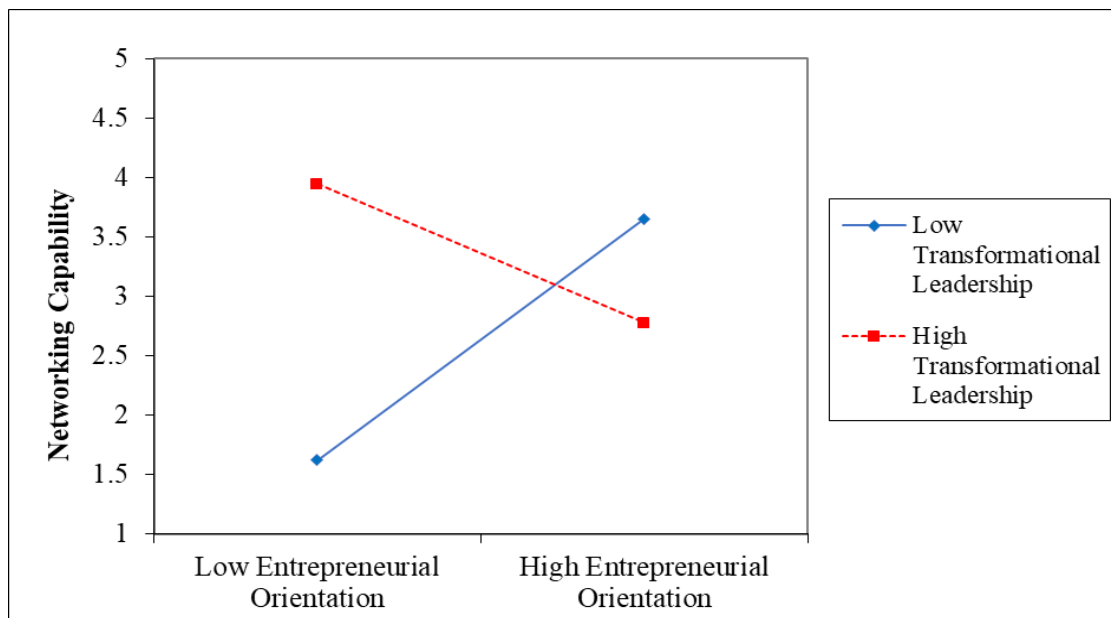


Figure 4.7: Graphical presentation of the moderating effect of transformational leadership on the relationship between entrepreneurial orientation and networking capability

4.14.8 The Moderating Effect of Transformational Leadership on the Relationship between Entrepreneurial Orientation and Firm performance (H07)

H₀₇: predicted that there is no moderating effect of transformational leadership on the relationship between entrepreneurial orientation and firm performance. In the second regression analysis (Model 2) we tested whether transformational leadership moderates the path from entrepreneurial orientation to firm performance (depicted as path *C'* of the conceptual framework). Findings shown in **Table 4.30**, reveal that both the firm age and firm size had an insignificant effect on firm performance with $\beta = .07$, $p = .15$ and $\beta = .02$, $p = .46$ respectively. Further findings revealed that

entrepreneurial orientation ($\beta = .46, p < .001$), networking capability ($\beta = .32, p < .001$) and transformational leadership ($\beta = .38, p < .001$) all had significant direct effects on firm performance with $R^2 = .96$ which was significant with $F(7, 392) = 1401.66, p < .001$ implying that the model explained 96% of the variability in firm performance. Results on interaction indicated that transformational leadership had a moderating effect on the relationship between entrepreneurial orientation and firm performance with $\beta = .03, p = .005$. Based on these findings, **Hypothesis H₀₇** is rejected by the study.

The above results are further illustrated and explained by **Figure 4.8**, which reveals that at low levels of entrepreneurial orientation, firm performance is high for the firms with high levels of transformational leadership than those with low levels of TL. On the other hand, as entrepreneurial orientation increases, firm performance is higher among firms with high levels of TL compared to those with lower levels of TL. The figure illustrates interaction since extrapolating the plot lines they intersect given that they are not parallel to each other.

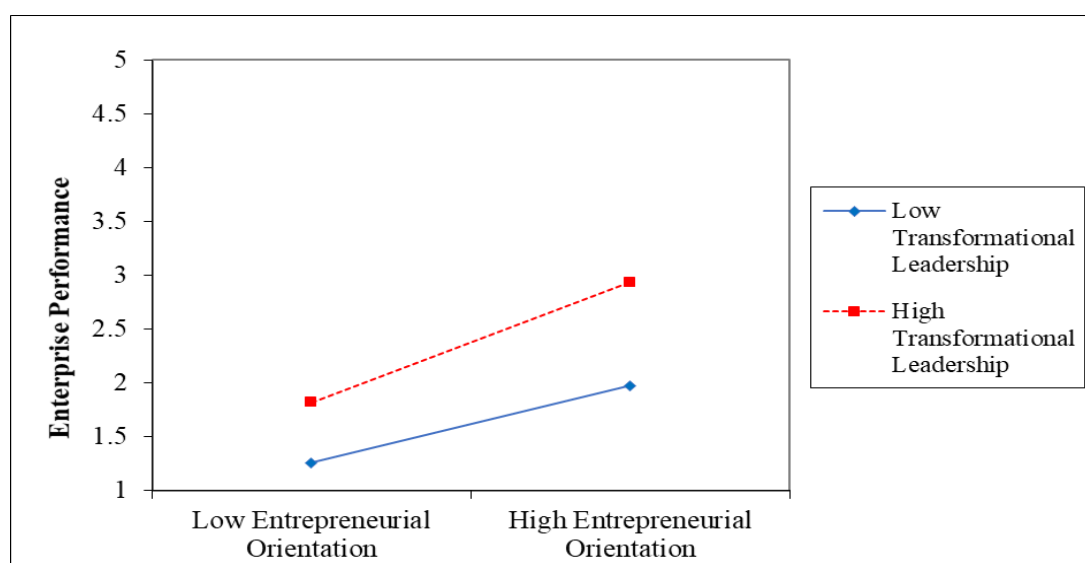


Figure 4.8: Graphical presentation of the moderating effect of transformational leadership on the relationship between entrepreneurial orientation and firm performance

4.14.9 The Moderating Effect of Transformational Leadership on the Relationship between Networking Capability and Firm performance (H08)

H₀₈: predicted that there is no moderating effect of transformational leadership on the relationship between networking capability and firm performance. Considering findings in Model 2, the researcher further tested whether transformational leadership moderates the link between networking capability and firm performance (path “ b_1 ” of the conceptual framework). Findings shown in **Table 4.30** indicated that the interaction of transformational leadership on the relationship was significant with $\beta = -.02$, $p = .006$. Therefore, proving that transformational leadership had a moderating effect on the link between networking capability and firm performance. Hence, the study further rejects **Hypothesis H₀₈**.

The findings are further supported by **Figure 4.9**, which shows that at low levels of networking capability, firm performance is high for the firms with high levels of transformational leadership than those with low levels of TL. On the other hand, as networking capability increases, firm performance increases for both groups. Notably, the increase is higher among firms with higher levels of TL compared to those with lower levels of TL. The figure illustrates interaction since extrapolating the plot lines they intersect given that they are not parallel to each other.

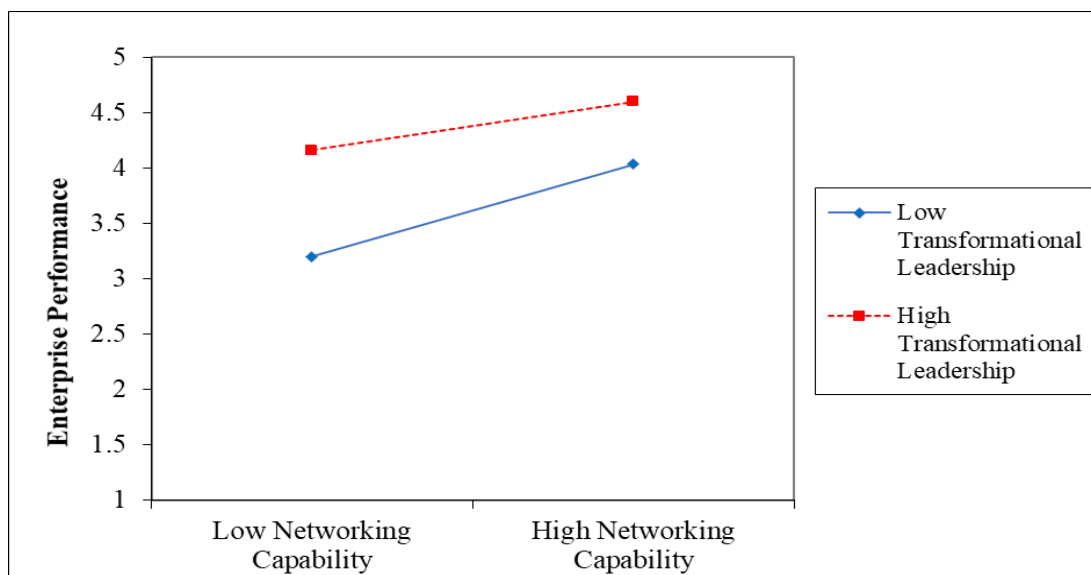


Figure 4.9: Graphical presentation of the moderating effect of transformational leadership on the relationship between networking capability and firm performance

Table 4.30: Results for Moderating Effect of Transformational Leadership on Study Variables (H₀₆, H₀₇ & H₀₈)-Appendix VIII

Variable Names	Model 1 (NC)				Model 2 (FP)			
	β	t	LLCI	ULCI	β	t	LLCI	ULCI
(Cons)	.89	4.69	.52	1.27	-.15	-2.59	-.27	-.04
FA	-.09	-.57	-.42	.23	.07	1.45	-.03	.17
FS	-.28**	-3.25	-.45	-.11	.02	.74	-.03	.07
EO	.22***	5.26	.13	.29	.46***	34.33	.43	.48
NC	-	-	-	-	.32***	21.41	.29	.35
TL	.36***	8.45	.28	.45	.38***	27.53	.35	.41
EO×TL	-	-8.36	-.16	-.10	<i>d</i> .03**	2.85	.01	.05
NC×TL	-	-	-	-	<i>f</i> -.02**	-2.74	-.04	-.01
R ²	.56				.96			
F	99.80***				1401.66***			

Source: Research (2022). Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Where;

β = Unstandardized parameter estimates coefficients

Cons = Constant

LLCI = Lower Limit Confidence Interval

ULCI = Upper Limit Confidence Interval

FA = Firm Age

FS = Firm Size

EO = Entrepreneurial Orientation

NC = Networking Capability

TL = Transformational Leadership

FP = Firm performance

Moderation and Moderated Mediation

$EO \times TL$ and $NC \times TL$ = Moderations / Interactions of the moderator and study variables

$(a_1+dW) (b_1+f W)$ = Moderated Mediation

Where;

a_1 – Path (NC \leftarrow EO)

b_1 – Path (FP \leftarrow NC)

d – Coefficient for interaction i.e. $EO \times TL$

f – Coefficient for interaction i.e. $NC \times TL$

W – Denotes the moderator (TL)

4.14.10 The moderating effect of Transformational Leadership on the indirect relationship between Entrepreneurial Orientation and Firm performance via Networking Capability (H₀₉)

H₀₉: predicted that there is no moderating effect of transformational leadership on the indirect relationship between entrepreneurial orientation and firm performance via networking capability. The researcher finally tested for moderated mediation by hypothesizing the different pathways between entrepreneurial orientation, networking capability and firm performance, with varying levels of transformational leadership. Indirect effect (s) of entrepreneurial orientation (**X**) on firm performance (**Y**) via networking capability, conditional on transformational leadership (**W**) (Moderated mediation Model) is indicated as $(a_1+dW) (b_1+f W)$ in the conceptual framework. Findings shown in **Table 4.31** indicated that the index of moderated mediation was significant with interaction effects between entrepreneurial orientation and

transformational leadership (EO x TL) and between networking capability and transformational leadership (NC x TL) both being significant with $\beta = .03, p = .005$ and $\beta = -.02, p = .006$ respectively. Therefore, $(a_1+dW) (b_1+f W) = (.56 + .03) * (.50 + [-.02]) = .28$. The significant conditional indirect effects at the different levels of the moderator were interpreted to mean that the moderator produced a differential effect in firm performance. Therefore, this meant that even though networking capability had a positive and significant mediating effect on the path between entrepreneurial orientation and firm performance, this was dependent on the level of transformational leadership as a moderating factor. Based on these findings, **Hypothesis H₀₉** is rejected by the study.

Results showed the indirect effect of the moderator at three levels of transformational leadership on the relationship between entrepreneurial orientation and firm performance via networking capability (**Table 4.31**). Findings confirm that the conditional indirect effect was insignificant at one standard deviation above the mean of transformational leadership ($\beta = .03, SE = .02, CI = -.01, .06$) but was found to be statistically significant across two levels of TL, with one standard deviation below the mean level of TL recording a higher effect ($\beta = .12, SE = .02, CI = .09, .16$) compared to a slightly reduced effect at the mean level of TL ($\beta = .07, SE = .01, CI = .04, .09$).

Table 4.31: Results for conditional process analysis showing the indirect effects at the three levels of transformational leadership

Different levels of the moderator	β	SE	LLCI	ULCI
Transformational leadership (-1SD)	.12	.02	.09	.16
Transformational leadership (Mean = 0)	.07	.01	.04	.09
Transformational leadership (+1SD)	.03	.02	-.01	.06

Source: Research (2022).

Where;

β = Unstandardized parameter estimates coefficients

SD = Standard Deviation

SE = Standard Error

LLCI = Lower Limit Confidence Interval

ULCI = Upper Limit Confidence Interval

Table 4.32: Summary Results of Hypotheses Tests

	Hypotheses	B	R²	ΔR²	p-value	LLCI	ULCI	Decision
H₀₁	Entrepreneurial orientation has no significant direct effect on firm performance	.85	.71	.69	.000	-	-	Reject
H₀₂	Networking capability has no significant effect on firm performance	.50	.87	.18	.000	-	-	Reject
H₀₃	Transformational leadership has no significant direct effect on firm performance	.38	.96	.08	.000	-	-	Reject
H₀₄	Entrepreneurial orientation has no significant direct effect on networking capability	.56	.30	.30	.000	-	-	Reject
H₀₅	Networking capability has no mediating effect on the relationship between entrepreneurial orientation and firm performance	.28	.32	-	-	.17	.37	Reject
H₀₆	Transformational leadership has no moderating effect on the relationship between firm performance and networking capability	-.13	.56	.08	.000	-.16	-.10	Reject
H₀₇	Transformational leadership has no moderating effect on the relationship between entrepreneurial orientation and firm performance	.03	.96	.001	.005	.01	.05	Reject
H₀₈	Transformational leadership has no moderating effect on the relationship between networking capability and firm performance	-.02	.96	.001	.006	-.04	-.01	Reject
H₀₉	Transformational leadership has no moderating effect on the strength of the indirect effect on the relationship between entrepreneurial orientation and firm performance via networking capability	.12	-	-	-	.09	.16	Reject
		.07	-	-	-	.04	.09	

Level of statistical significance: ≤ .05

Source: Research data (2022)

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focused on presenting the summary of the findings in chapter four, discussion, drawing conclusions from the findings, contribution to knowledge, study limitations and formulate recommendations that can guide future policy review especially in terms of strategic management, recommendation for managerial practice and future research.

5.2 Summary of the Findings

The key highlights of this chapter are that Entrepreneurial Orientation (innovativeness, risk taking, pro-activeness, competitive aggressiveness and autonomy) Networking Capability and Transformational Leadership significantly affect Firm performance among manufacturing firms in Nairobi County, Kenya. Entrepreneurial Orientation has also been found to significantly affect Networking capability in this study. There are gaps that have been identified hence assisting in identifying the areas that need to be further reviewed so as to enhance the performance of manufacturing firms in Kenya.

First, the summary of the background characteristics is presented followed by the descriptive and inferential findings that are presented per the objectives of the study. The theoretical foundations and empirical results based on the objectives and hypotheses formulated are discussed in summary as follows:

The demographic characteristics in this study pertain to the firm size and firm age. The median firm size was 295 with the smallest company having 18 employees and the largest firm having slightly over 10000 employees. On the other hand, the median firm age for the firms included in the study was 27 years since being established. The youngest company had been in operation for 3 years with the oldest company having been in operation for 132 years.

The descriptive statistics for the study variables following data transformation indicated that all variables had a composite mean score of above 5.91. Findings showed that transformational leadership had the highest mean of 6.05. Further findings showed respondents' agreement with statements describing networking capability with a composite mean of 5.90, Firm performance followed with a composite mean of 5.86. Finally, respondents agreed on statements describing entrepreneurial orientation with a composite mean of 5.83.

The inferential statistics used in the study show clearly that entrepreneurial orientation, networking capability and transformational leadership influence manufacturing firm performance in Nairobi, Kenya with control variables taken into consideration. Additionally, transformational leadership was found to moderate the relationship between EO and NC, NC and FP and EO and FP. The findings also revealed that moderated mediation took place in this study, that is transformational leadership moderates the indirect relationship.

Firstly, from the correlation tests, it is clear that entrepreneurial orientation, networking capability and transformational leadership all positively correlate with firm performance. The highest positive correlation was the relationship between firm performance and entrepreneurial orientation with $r = .84$, $p < .01$, followed by firm

performance and transformational leadership with $r = .83$, $p < .01$, while the correlation between entrepreneurial orientation and networking capability and between entrepreneurial orientation and transformational leadership both had equal but the lowest positive correlations of $r = .53$, $p < .01$. In addition, drawing from the hypotheses tests, findings show that entrepreneurial orientation has a significant direct effect on firm performance with $\beta = .85$, $p < .001$ with $R^2 .71$, and $\Delta R^2 .69$, $F(3,396) = 321.77$, $p < .001$. This implies that controlling for the covariates, entrepreneurial orientation explains 71% of the total variance in firm performance. Based on these results, **Hypothesis H₀₁** was rejected.

Additionally for the second hypothesis, findings reveal that firm age had a significant effect and firm size had no significant effect on firm performance. However, entrepreneurial orientation and networking capability significantly and positively predict firm performance with $\beta = .56$, $p < .001$ and $\beta = .50$, $p < .001$ respectively, with $R^2 .87$ and $\Delta R^2 .18$, with a statistically significant $F(4,395) = 767.07$, $p < .001$. This implies that the model explains 87% of the total variance in firm performance. Additionally, R-square change of .18 implies that networking capability explains 18% of the total variations in firm performance while holding all covariates and entrepreneurial orientation constant. Hence **Hypothesis H₀₂** was rejected.

Consequently, results for the third hypothesis reveal that reveal that both firm age and firm size had insignificant effects on firm performance. However, findings show that entrepreneurial orientation had a significant effect on firm performance with parameter estimates showing $\beta = .44$, $p < .001$. Further findings showed that networking capability and transformational leadership were both significant predictors of the outcome variable with $\beta = .47$, $p < .001$. Further findings showed that

networking capability and transformational leadership were both significant predictors of the outcome variable with $\beta = .31, p < .001$ and $\beta = .38, p < .001$ respectively, with $R^2 = .96$ and $\Delta R^2 = .08$, with a statistically significant $F(5, 394) = 1929.08, p < .001$. The R^2 change indicates that controlling for all other variables in the model, transformational leadership as a moderating variable accounts for 8% of the total variance in firm performance. Based on the findings discussed above, **Hypothesis H₀₃** is rejected by the study.

Additionally, the fourth hypothesis results reveal that the only significant co-variate was firm size. Likewise, entrepreneurial orientation had a statistically significant direct effect on networking capability with $\beta = .56, p < .001, R^2 = .30, \Delta R^2 = .30$, with a significant $F(3, 396) = 57.73, p < .001$. Therefore this model explained 30% of the total variance in networking capability and the R^2 change of 30% indicates the proportion of variance in networking capability accounted for by entrepreneurial orientation. Based on these results, **Hypothesis H₀₄** is rejected by the study.

In addition, results for the fifth hypothesis which stated that networking capability has no mediating effect on the relationship between EO and manufacturing firm performance revealed that the mean indirect effect from the bias-corrected percentile bootstrap analysis is positive and significant indicating $M3 = (a_1 \times b_1) = .56 \times .50 = .28, SE = .04, 95\% CI = [.17, .37]$, which was significant with the confidence interval (CI) not straddling a zero. The direct effect C' (.56) is significant while holding constant networking capability. Hence, $a_1 \times b_1 \times C' = .56 \times .50 \times .56 = .16$ gives a positive result indicating complementary mediation. These means that the two paths, [direct (C') + indirect effect ($M3$)] both contribute to the total effect; $C' + (a_2 \times b_2) = .56 + .28 = .84$ with the model explaining 71% ($R^2 = .71$) of the total variance which is

significant with $F(3,396) = 321.77, p < .001$. From the above results, there is significant evidence that the confidence intervals for the indirect effect is non-inclusive of zero, thus confirming the presence of mediation effect. Hence, **Hypothesis H₀₅** is rejected.

Further, results for hypothesis six which stated that there is no moderating effect of TL on the relationship between EO and networking capability showed that entrepreneurial orientation and transformational leadership had significant effects on networking capability with $\beta = .22, p < .001$, and $\beta = .36, p < .001$ respectively with $R^2 = .56$ which was significant and further results show that transformational leadership had a moderating effect on the relationship between entrepreneurial orientation and networking capability, with the interaction results found to be significant with $\beta = -.13, p < .001$. Therefore, based on these findings, **Hypothesis H₀₆** is rejected by the study hence indicating that the sixth objective was met by the study.

Consequently, results for the seventh hypothesis revealed that entrepreneurial orientation ($\beta = .46, p < .001$), networking capability ($\beta = .32, p < .001$) and transformational leadership ($\beta = .38, p < .001$) all had significant direct effects on firm performance with $R^2 = .96$ which was significant with $F(7, 392) = 1401.66, p < .001$ implying that the model explained 96% of the variability in firm performance. Results on interaction indicated that transformational leadership had a moderating effect on the relationship between entrepreneurial orientation and firm performance with $\beta = .03, p = .005$. Based on these findings, **Hypothesis H₀₇** is rejected by the study.

Further, results for the eighth hypothesis showed that the interaction of transformational leadership on the relationship between networking capability and firm performance was significant with $\beta = -.02, p = .006$. Therefore, proving that

transformational leadership had a moderating effect on the link between networking capability and firm performance among manufacturing firms. Hence, the study further rejects **Hypothesis H₀₈**. Finally results for the ninth hypothesis which was testing the moderated mediation aspect in the study revealed that interaction effects between entrepreneurial orientation and transformational leadership (EO x TL) and between networking capability and transformational leadership (NC x TL) were both significant with $\beta = .03, p = .005$ and $\beta = -.02, p = .006$ respectively. Therefore, $(a_1+d W) (b_1+f W) = (.56 + .03) * (.50 + [-.02]) = .28$. This Implies that moderated mediation was evident in this study hence leading the researcher to reject **Hypothesis H₀₉**.

5.3 Discussion

The first objective of this study was to analyze the effect of entrepreneurial orientation on the performance of manufacturing firms. This study found that EO actually has an effect on manufacturing firm performance meaning that for these firms to enhance their performance, they need to adopt an EO strategy for the betterment of their firms' performance. These firms will therefore need to be innovative in their operations, they need to be risk takers, they need to be proactive in the market, they need to embrace competitive aggressiveness so as to beat their competitors and also be autonomous. The study's findings compare well with other studies which reported the effect of entrepreneurial orientation on firm performance to be significant (Young *et al.*, 2019; Stambaugh *et al.*, 2017; Palmer, C. *et al.*, 2017; Jiang *et al.*, 2016 and Tang *et al.*, 2017). Additionally, these results also are contrary to the research done by Wee *et al.*, (2018), who discovered that innovativeness and risk taking have a negative association with company performance, indicating that they are ineffective in enhancing firm performance.

The second objective of this study was to ascertain the effect of networking capability on manufacturing firm performance. The study managed to ascertain that networking capability has an effect on performance of manufacturing firms meaning that for firms to heighten and improve their performance, they should engage in networking and enhance their networking capability. These firms should therefore develop strategies of identifying appropriate network partners, they should be able to manage these network relationships so as to benefit for a long period of time and the firms should be in a position to leverage from these relationships hence be able to acquire relevant assistance from their partners both locally and globally in a timely manner. This study's findings are supported by the work of Randy, *et al.*, (2020) who posit that networking capability benefits outperform its dark sides and that networking capability contributes to firm performance. The study also contradicts the findings of Yang *et al.*, (2018) who noted that networking may cause an unbalanced outflow of firms' specific assets.

The third objective of this study was to examine the effect of transformational leadership on the performance of manufacturing firms. This study met its third objective which means that transformational leadership indeed affects and can improve manufacturing firm performance. This therefore means that for these firms to improve their performance, they will be required to adopt an aspect of transformational leadership in their top management. This study's finding is well supported by a study done by Jensen, M. *et al.*, 2020 who found that transformational leadership positively affects firm performance. This style of leadership which has four behavioural characteristics, that is, idealized influence whereby the leader is respected and admired by his/her followers; inspirational motivation whereby the leader is a motivator; intellectual stimulation whereby the leader encourages innovativeness

among his/her followers; and individual consideration whereby the leader shows concern to his/her followers, would be highly beneficial to these firms. Additionally, these findings are supported by the findings from Arif, S. & Akram, A. (2018) and Burawat, P. (2019) who also found a very strong relationship between transformational leadership and firm performance hence indicating that the study's third objective was met. On the contrary, this study's findings contradict those of other researchers (Chun, *et al.*, 2016; Han, *et al.*, 2018; Ng, 2017; Nguyen, *et al.*, 2017).

The fourth objective of this study was to determine the effect of entrepreneurial orientation on networking capability which was ascertained by this study's findings. Consequently, the fifth objective of this study was to determine the mediating effect of networking capability on the relationship between EO and performance of manufacturing firms. This study sought to investigate whether networking capability mediates the relationship between EO and firm performance which was ascertained through the findings. This means that the causal effect of entrepreneurial orientation on firm performance is attributable through the effect of networking capability. Hence the study validated that networking capability is indeed the mechanism through which EO and manufacturing firm performance come to be related. Other scholars have suggested that to enhance the EO-performance theory, other variables have to be tested, for instance, (Young-min *et al.*, 2019; Karami & Tang 2019 and Wales 2016). Hence this study has contributed to the EO-performance literature. Additionally, other researchers have also determined that firms can positively influence EO through their networking practices. The effects of networking are vastly studied and have been found to affect entrepreneurial opportunities hence improving firm performance (Stam 2010; Gaudici 2013).

The sixth objective of this study was to analyze the moderating effect of transformational leadership on the relationship between EO and networking capability among manufacturing firms which was ascertained in this study. Additionally, the seventh objective of this study was to explore the moderating effect of TL on the relationship between EO and performance among manufacturing firms. This was equally determined by this study's findings. These results are supported by the findings of A. Engelen *et al.*, 2015, who found in their study that TL moderates the relationship between EO and firm performance.

The eighth objective of this study was to ascertain the moderating effect of TL on the relationship between networking capability and performance among manufacturing firms. The study found that transformational leadership actually moderates the relationship between networking capability and manufacturing firm performance. Finally, the ninth objective of this study was to examine the moderating effect of TL on the indirect effect of EO on manufacturing firm performance via networking capability. The study's findings showed that transformational leadership moderates the indirect relationship between EO and firm performance through networking capability. This study's finding indeed validates the concept behind moderated mediation by proving that mediation and moderation can be combined in one model and that this study's model shows that the mediating effect of networking capability on the EO-performance relationship is dependent on the level of transformational leadership, the moderator. Hence the study has contributed to new knowledge.

5.4 Conclusion

Conclusively, this study investigated the effect of entrepreneurial orientation, networking capability and transformational leadership on performance among

manufacturing firms and further mediation effect of networking and the moderating role of transformational leadership. All the study's hypotheses were rejected indicating that there is a significant relationship between entrepreneurial orientation, networking capability and transformational leadership on manufacturing firm performance. Further the study indicates clearly that transformational leadership moderated the relationships between EO and performance, EO and networking capability, networking capability and performance and also the indirect relationship.

Entrepreneurial orientation positively impacts on manufacturing firm performance in Nairobi, Kenya. Being one of the dimensions of Strategic orientation, it simply means that firms that embrace entrepreneurial orientation will be in a better position in terms of pursuing new market opportunities and renewing the existing areas of operation. Since entrepreneurial orientation involves processes, structures and behaviours of firms characterized by innovativeness, pro-activeness, risk taking, competitive aggressiveness and autonomy, embracing it will help mitigate performance issues and as a result improve a firm's overall performance. The study also suggests that there is a significant statistical association between entrepreneurial orientation and manufacturing firm performance.

Further, there is need to blend EO with other factors used in this study, that is networking capability and transformational leadership in order to achieve the firm's goals with proper enhancement and moderation of the aspect of EO. For these firms to fully benefit from EO, it would depend on top management's networking capability and their transformational leadership behaviours. Therefore, EO significantly and positively affects networking capability, networking capability significantly and positively affects manufacturing firm performance, Networking capability

significantly mediates the relationship between EO and firm performance, transformational leadership significantly moderates the relationship between EO and networking capability, networking capability and firm performance, EO and firm performance. From the study's findings, it is evident that TL further moderates the indirect relationship between EO and performance through networking capability.

5.5 Contribution to Knowledge

5.5.1 Theoretical contribution

This research has several important implications for entrepreneurial orientation literature. Since the works of various scholars were mainly used as the conceptual underpinning for entrepreneurial orientation construct in this study, the findings of this thesis confirmed and extended knowledge of entrepreneurial orientation conceptualizations. Given that more studies need to be done on the role of mediators and moderators in the EO-performance studies, support for the conceptualizations was significant for the expansion of knowledge within this field. Notably, since this study was conducted solely in Kenya, one should be aware of the findings in terms of generalizability to other cultural contexts. In spite of the argument that effect of entrepreneurial orientation and manufacturing firm performance in Kenya should be generally stable over time and integral to the firms.

Additionally, this study's findings also fit in to the Resource Based View theory (RBV) which posits that different assets such as EO and NC can be considered as resources and capabilities. The main theory which guided this study was the RBV theory whose tenets are that in strategic management the fundamental sources and drivers to firms' competitive advantage and superior performance are mainly associated with the attributes of their resources and capabilities which are valuable

and costly-to-copy. Barney (1991), asserts that for firm's resources to yield competitive advantage and superior performance, these resources (assets, capabilities, organizational processes, firm attributes, information and knowledge controlled by a firm) should have the following indicators: value, rareness, inimitability, and non-substitutability. The main variables for this study were Entrepreneurial orientation, Networking capability and Transformational leadership which from the findings all had significant effects on firm performance. Hence from this study it is evident that these resources if well utilized by the manufacturing firms can indeed help the firms achieve superior performance and gain competitive advantage in the market.

This study is one of its kind with three direct interactions of entrepreneurial orientation, networking capability and firm performance among manufacturing firms in Kenya. The findings showed a significant and positive effect of entrepreneurial orientation on networking capability, a significant and positive effect of networking capability on firm performance and a significant and positive effect of entrepreneurial orientation on firm performance. Additionally, the study has given new knowledge on significant mediation effect of networking capability and showed that there is a positive and significant moderating effect of transformational leadership on the relationship between entrepreneurial orientation and firm performance through networking capability.

5.5.2 Methodological contribution

This study is using an advanced technique in the analysis of variables whereby the researcher is embracing moderated mediation model which represents a combination of mediation and moderation effects among variables in one model. A moderated mediation model normally is used by researchers to show that a mediation effect is

actually dependent on the level or value of a moderator (Hayes, 2013). The study currently has validated the moderated mediation effect of networking capability and transformational leadership significantly affecting the relationship between Entrepreneurial orientation and firm performance. This study actually sought to determine the moderating effect of transformational leadership on the overall relationship between entrepreneurial orientation and manufacturing firm performance via networking capability which was ascertained in the study. And on interaction, under high level of TL, EO enhances networking capability. Also with high level of TL entrepreneurial orientation through networking capability enhances firm performance.

5.5.3 Contextual contribution

From literature reviewed it is quite evident that other researchers in this area have conducted their studies in developed countries including Asia, America and Australia whereas this study was conducted in a developing country specifically Kenya. Additionally, the concept of entrepreneurial orientation and networking capability have been done in small and medium sized companies whereas this study looked at even the large sized manufacturing firms hence the researcher expanded the unit of observation.

5.6 Study Limitations

This study came with few limitations, for instance the study targeted the manufacturing industry which is subdivide into 14 subsectors. Therefore the study findings are generalized to all the sub sectors hence it is not possible to tell exactly the effect of the study's finding in each sub sector. Additionally, since this study was firm level, the respondents were the top managers. Hence it was a limitation in the sense

that the study took longer since in other firms you couldn't find the managers, hence one had to wait or even come at a later time to see them.

5.7 Recommendations

5.7.1 Recommendation for Policy

This study's recommendation to the ministry of industrialization especially on leadership is to ensure that leaders of these firms have the right and relevant skills of leadership preferably transformational leadership qualities. They should have gone through relevant leadership training courses in institutions of higher learning or centres of excellence where they can acquire the right and appropriate skills for leading the manufacturing firms to greater success levels. The government should enhance strategic partnerships with institutions of higher learning and Research and development for continuous acquisition and knowledge resources for training and development of competent leaders. In addition, the ministry of industrialization should come up with policies that put more emphasis to manufacturing firms to enhance innovativeness, proactiveness, risktaking, competitive aggressiveness and autonomy attitudes among owners/managers of these firms. Further, the government should come up with a framework for linking manufacturing firms to partners locally and even globally so that it can benefit all firms including the small and medium sized firms when it comes to networking. Additionally, the government should ensure entrepreneurship courses are infused into all curricula of colleges and institutions of higher learning so that everyone gets an opportunity to learn and acquire entrepreneurial capability skills.

5.7.2 Recommendation for Managerial practice

This study recommends that, to improve on their performance, manufacturing firms should consider embracing entrepreneurial orientation which encompasses innovativeness, risk taking, pro-activeness, competitive aggressiveness and autonomy. Since entrepreneurial orientation is a major predictor of firm performance. Firms that adopt entrepreneurial orientation are better placed in terms of improved performance and becoming more entrepreneurial hence gaining competitive advantage. In addition, firms should also embrace a culture of networking with other firms so as to gain from their networks whether it is in terms of resource sharing or gaining new knowledge. In conclusion, the manufacturing firms should instil the vital resource of entrepreneurial orientation through a blend of networking capability and transformational leadership so as to strategically enrich firm performance.

Additionally, this study recommends that these manufacturing firms should consider building leadership capability towards transformational leadership so that they can enhance the leadership skills among their leaders. Transformational leaders will assist these firms by engaging the employees and also encouraging them to achieve the manufacturing firms' targets and even beyond hence improve performance among these firms. This study also recommends that these firms should build entrepreneurial capability among employees which enhances their capabilities to seize opportunities in the market for the betterment of their firms. Once they build entrepreneurial capability among the employees and the leaders of these firms, they will be able to pursue new market opportunities, renew the existing areas of operation, the firms will be highly proactive towards risk tolerance and innovativeness. Therefore entrepreneurial capability will aid in enhancing better and improved firm performance for these firms.

Further, it is this study's recommendation that the manufacturing firms should be able to develop appropriate mechanisms to help them in finding appropriate network partners with whom they can collaborate. This is very important so that they can be able to benefit from such partners whether it is in terms of resource sharing or information exchange that can be beneficial to their performance. In addition to finding network partners, these firms should develop a system that can assist them in managing network relationships in the long run. When they are able to manage these relationships in the long run, then they can be able to benefit from such relationships longer hence assure long term performance and survival for their firms. Consequently, the manufacturing firms should be able to leverage from their well-established network relationships by being able to acquire required assistance from their partners in a timely manner. If these firms can be able to apply the following strategies, then they can improve their firms' performance greatly and even gain competitive advantage in the market.

5.7.3 Recommendation for further research

1. The study was quantitative in nature and hence it employed only structured questionnaires to collect primary data. A mixed method approach may yield more richer and in-depth findings.
2. Further studies should adopt other analysis techniques like Structural Equation Modeling (SEM) and other software apart from SPSS.
3. Due to limited scope of this study on only manufacturing firms, further research is suggested focusing on firms in other industries and larger sample sizes are also encouraged in future studies. Firm performance studies in other sectors like in the service sector or the public sector other than manufacturing sector is highly encouraged for future research.

4. Since the study's findings focused on the fourteen sub sectors and generalizations were made, this study suggests that future studies can look at each sub sector separately.
5. Additionally, this study used one of the dimensions of strategic orientation. Other scholars might want to look at the other dimensions of SO like market orientation or learning orientation viz a viz firm performance.
6. Finally, other studies in future can do a comparative study by looking at Entrepreneurial orientation in large firms and compare with EO in small firms to decipher the differences.

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APPENDICES

Appendix I: Moi University Introductory Letter



MOI UNIVERSITY
SCHOOL OF BUSINESS AND ECONOMICS
OFFICE OF THE POSTGRADUATE STUDIES

Tel: 0722271134
0722685969

P.O. Box 3900
Eldoret.
KENYA

Fax No: (053) 43047
Telex No. MOIVARSITY 35047

RE: SBE/PGR/REC/11

DATE: 6th December, 2021

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: GLORIA TUWEI – SBE/PhD/BM/012/14

The above named is a bonafide student of Moi University School of Business and Economics, pursuing a Doctor of Philosophy in Business Management degree; specializing in **Strategic Management**. She has completed her coursework, defended her proposal, and currently she is proceeding to the field to collect data for her research titled: **“Entrepreneurial Orientation, Networking Capability and Transformational Leadership on firm performance among manufacturing firms in Nairobi County, Kenya.”**

Any assistance accorded to her will be much appreciated.

Yours faithfully,



DR. RONALD BONUKE
CHAIR POSTGRADUATE,
SCHOOL OF BUSINESS AND ECONOMICS.

RB/ms



Appendix II: Letter of Introduction to Respondents

Gloria Jemutai Tuwei,

P.o. Box 4223,

Eldoret.

Dear Respondent,

My name is Gloria Jemutai Tuwei, a student of Moi University, School of Business and Economics undertaking a Doctoral degree in Business Management (Strategic Management option). I am undertaking a research titled “Entrepreneurial Orientation, Networking capability, Transformational leadership and Performance among manufacturing Enterprises in Nairobi County, Kenya”. Your assistance will be highly appreciated. Any information you provide will be kept confidential and will only be used for academic purposes.

Thank you in advance.

Gloria Jemutai Tuwei

SBE/DPHIL/BM/012/14

Appendix III: Questionnaire

Instructions: This is not a test. The researcher has identified you as one of the respondents for this study entitled “Effect of Entrepreneurial Orientation, Networking capability and Transformational leadership on Performance of manufacturing firms in Nairobi County, Kenya”. Please be honest when answering the questions. Fill or tick where appropriate. Your responses will be treated in strict confidentiality and used only for the purpose of this research.

Thank You.

SECTION A: FIRM PERFORMANCE

Listed below are statements describing the performance of your manufacturing firm, how would you rate your firm’s actual current conditions of performance? Key (SD= Strongly Disagree, MD=Moderately Disagree, D= Disagree, N= Neutral, A= Agree, MA=Moderately Agree, SA= Strongly Agree).

Firm performance		SD	MD	D	N	A	MA	SA
A1	The revenue (sales) of our company continues to grow							
A2	Our current profitability is very much higher than that of other comparable businesses							
A3	Customers make repeated transactions in our firm							
A4	Complaints from our customers continue to decline							
A5	Our current turnover is very much higher than that of other firms							
A6	We have been very successful in attracting and retaining new customers							
A7	Our firm has been able to satisfy our clients due to the positive comments we receive from them							
A8	The performance of our firm has been satisfactory							
A9	There is an increase in old customers providing references to new customers.							

SECTION B: ENTREPRENEURIAL ORIENTATION

In terms of entrepreneurial orientation please indicate how much you agree or disagree with the following statements. Tick in an area that best reflects your opinion for each statement (SD= Strongly Disagree, MD=Moderately Disagree, D= Disagree, N= Neutral, A= Agree, MA=Moderately Agree, SA= Strongly Agree).

Innovativeness		SD	MD	D	N	A	MA	SA
B1	We actively introduce improvements and innovations in our firm							
B2	Our firm is creative in its methods of operation							
B3	Our firm seeks out new ways of doing things							
B4	In general we favor a strong emphasis on the marketing of tried-and-true products or services							
B5	In our company, there exists a very strong emphasis on technological leadership and innovations							
B6	Our firm has marketed very many new lines of products or services in the past five years (or since its establishment)							
B7	Our firm has not marketed any new lines of products or services in the past five years (or since its establishment)							
B8	In our firm, changes in product or service lines have been mostly of a minor nature							
B9	In our firm, changes in product or service lines have usually been quite dramatic							

Risk taking		SD	MD	D	N	A	MA	SA
B10	The term "risk taker" is considered a positive attribute for people in our firm							
B11	People in our firm are encouraged to take calculated risks with new ideas.							
B12	Our firm emphasizes both exploration and experimentation for opportunities							
B13	In general, the top managers of our firm have a strong proclivity for low-risk projects (with normal and certain rates of return)							
B14	Generally, the top managers of our firm have a strong proclivity for high-risk projects (with chances of very high returns)							

B15	In general, the top managers of our firm believe that owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour							
B16	Generally, the top managers of our firm believe that owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives							
B17	When confronted with decision-making situations involving uncertainty, our firm typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions							
B18	When confronted with decision-making situations involving uncertainty, our firm typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential Opportunities							
Pro-activeness		SD	MD	D	N	A	MA	SA
B19	In our firm, we always try to take the initiative in every situation (e.g., against competitors, in projects when working with others)							
B20	Our firm excels at identifying opportunities							
B21	Our firm initiates actions to which other organizations respond							
B22	In dealing with its competitors, our firm typically responds to actions which competitors initiate							
B23	Our firm constantly seeks opportunities to improve our business performance							
B24	Our firm continuously identifies future needs of customers							
B25	Our firm continuously monitors market trends							
B26	Our firm continuously seeks opportunities such as new market related to the present operation							
B27	Our firm continuously seeks opportunities such as new customer related to the present operation							
B28	Our firm adopts technological capabilities ahead of competitors							

B29	Our firm markets new products ahead of competitors							
B30	Our firm adopts creative methods of running business ahead of competitors							
Competitive Aggressiveness		SD	MD	D	N	A	MA	SA
B31	Our firm adopts a price-cutting strategy to enhance competitive position							
B32	In general, our firm takes a bold or aggressive approach when competing							
B33	Our firm tries to undo and out-manoeuvre the competition as best as we can							
B34	Our firm typically seeks to avoid competitive clashes, preferring a “live-and-let-live” posture							
B35	Our firm is copying the business practices of successful competitors to enhance competitive position							
B36	Our firm is intensely competitive							
Autonomy		SD	MD	D	N	A	MA	SA
B37	Employees are permitted to act and think without interference in our firm							
B38	In our firm, employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks							
B39	Employees are given freedom and independence to decide on their own how to go about doing their work in our firm							
B40	Employees are given freedom to communicate without interference							
B41	Employees are given authority and responsibility to act alone if they think it to be in the best interests of the firm							
B42	In our firm, employees have access to all vital information							

SECTION C: TRANSFORMATIONAL LEADERSHIP

In terms of Transformational Leadership, to what extent do you agree with the following statements?

Our top management

Articulating a vision		SD	MD	D	N	A	MA	SA
C1	Has a clear understanding of where we (as a firm) are going							
C2	Paints an interesting picture of the future of our firm							
C3	Seeks always new opportunities for the firm							
C4	Inspires others with its plans for the future.							
C5	Is able to get others committed to its dreams.							
Providing an appropriate model								
C6	Leads by “doing” rather than simply by “telling.”							
C7	Provides a good model for the employees in our firm to follow							
C8	Leads by example							
Facilitating acceptance of group goals								
C9	Fosters collaborating among work groups							
C10	Encourages employees to be “team players.”							
C11	Gets the group to work together for the same goal							
C12	Develops a team attitude and spirit among employees							
Having high expectations								
C13	Makes it clear to the personnel in our firm that it expects to give 110 percent all the time							
C14	Encourages employees to be “team players.”							
C15	Insists on only the best performance							
C16	Will not settle for the second best							
Showing supportive leader behavior								
C17	Acts with consideration the feelings of other employees in the firm							
C18	Considers the personal feelings of the personnel before acting							

C19	Shows respect for the personal feelings of the employees in our firm							
C20	Treats employees with consideration of their personal feelings							
Offering Intellectual stimulation								
C21	Challenges personnel in our firm to think about problems in new ways							
C22	Asks questions that prompt our employees to think about the way they do things							
C23	Stimulates to rethink the way employees in our firm do some things							
C24	Has ideas that have challenged the personnel in our firm to reexamine some of our basic assumptions about work							

SECTION D: NETWORKING CAPABILITY

Networking Capability		SD	MD	D	N	A	MA	SA
Finding Network Partners								
D1	Our organisation has a system or mechanism in place to help us search locally to find proper network partners							
D2	Our organisation has a system or mechanism in place to help us search globally to identify appropriate network partners							
D3	Our organisation has a system or mechanism in place to help us search widely to look for suitable partner							
D5	Our organisation has a system or mechanism in place to help us find partners to count on when the need arises							
Managing Network relationship								
D6	Our organisation can design an appropriate mechanism to navigate the dynamics of the partner network							
D7	Our organisation can fine-tune network partnership relationships							
D8	Our organisation constantly analyses relationships with partners so that we							

	know what adjustments to make							
D9	Our organisation can dynamically integrate networking activities into our business operational process							
Leveraging network relationship								
D10	Our organisation can obtain the required assistance from our partners in an accurate manner							
D11	Our organisation can obtain the required assistance from our partners in a timely manner							
D12	Our partners can refer us to a third party who could help if the partners cannot provide direct help							
D13	Our partners can share resources with us when we need it							

SECTION E: CONTROL VARIABLES

Kindly tick appropriately for the age and size of your firm

Firm Age

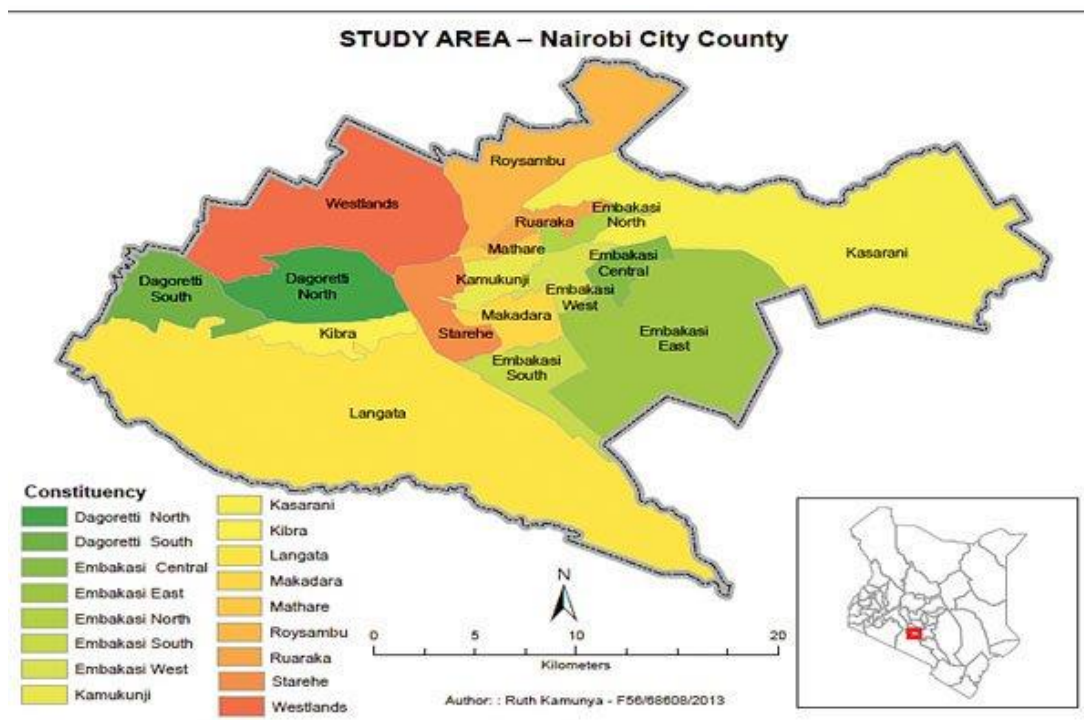
How many years has your firm been in existence since its establishment?

Firm Size

How many employees do you have in your firm?

I sincerely appreciate your time and cooperation. Please check to make sure that you have not skipped any questions accidentally. Thank you!

Appendix IV: Map of Nairobi County



Appendix V: Research Permit


REPUBLIC OF KENYA


**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

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RESEARCH LICENSE



This is to Certify that Ms. GLORIA Jemutai TUWEI of Moi University, has been licensed to conduct research in Nairobi on the topic: Entrepreneurial orientation, Networking capability and transformational leadership on performance of manufacturing firms in Nairobi county. for the period ending : 25/January/2023.

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Appendix VI: Test for Mediation – PROCESS v4.0 Model 4

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.0

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

Model : 4
Y : ZEP
X : ZEO
M : ZNC

Covariates:
LogFA LogFS

Sample
Size: 400

OUTCOME VARIABLE:

ZNC
Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.5516	.3043	.7010	57.7296	3.0000	396.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.5319	.2367	2.2470	.0252	.0665	.9972
ZEO	.5567	.0425	13.1012	.0000	.4732	.6402
LogFA	.1810	.2081	.8694	.3852	-.2282	.5901
LogFS	-.3291	.1097	-3.0001	.0029	-.5448	-.1134

Standardized coefficients

	coeff
ZEO	.5567
LogFA	.0493
LogFS	-.1716

OUTCOME VARIABLE:

ZEP
Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.9412	.8859	.1152	767.0687	4.0000	395.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.3567	.0966	-3.6934	.0003	-.5465	-.1668
ZEO	.5641	.0206	27.3496	.0000	.5235	.6046
ZNC	.5042	.0204	24.7480	.0000	.4641	.5442
LogFA	.1930	.0845	2.2856	.0228	.0270	.3591
LogFS	.0315	.0450	.7014	.4835	-.0569	.1200

Standardized coefficients

	coeff
ZEO	.5641
ZNC	.5042
LogFA	.0526
LogFS	.0165

***** TOTAL EFFECT MODEL *****

OUTCOME VARIABLE:

ZEP

Model Summary

R	R-sq	MSE	F	df1	df2	p
.8421	.7091	.2931	321.7664	3.0000	396.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0885	.1531	-.5783	.5634	-.3894	.2124
ZEO	.8448	.0275	30.7443	.0000	.7907	.8988
LogFA	.2843	.1346	2.1122	.0353	.0197	.5489
LogFS	-.1344	.0709	-1.8944	.0589	-.2738	.0051

Standardized coefficients

	coeff
ZEO	.8448
LogFA	.0774
LogFS	-.0701

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI	c_cs
.8448	.0275	30.7443	.0000	.7907	.8988	.8448

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI	c'_cs
.5641	.0206	27.3496	.0000	.5235	.6046	.5641

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
ZNC	.2807	.0495	.1747	.3685

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
ZNC	.2807	.0406	.1911	.3475

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

500

----- END MATRIX -----

Appendix VII: Test for Moderation and Moderated Mediation – PROCESS v4.0

Model 59

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.0 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

Model : 59
 Y : ZEP
 X : ZEO
 M : ZNC
 W : ZTL

Covariates:
 LogFA LogFS

Sample
 Size: 400

 OUTCOME VARIABLE:
 ZNC

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.7475	.5588	.4468	99.8040	5.0000	394.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.8984	.1913	4.6970	.0000	.5223	1.2744
ZEO	.2157	.0410	5.2620	.0000	.1351	.2963
ZTL	.3626	.0429	8.4536	.0000	.2783	.4469
Int_1	-.1311	.0157	-8.3599	.0000	-.1619	-.1003
LogFA	-.0961	.1672	-.5747	.5658	-.4248	.2326
LogFS	-.2854	.0878	-3.2514	.0012	-.4579	-.1128

Product terms key:

Int_1 : ZEO x ZTL

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0783	69.8878	1.0000	394.0000	.0000

Focal predict: ZEO (X)
 Mod var: ZTL (W)

Conditional effects of the focal predictor at values of the moderator(s):

ZTL	Effect	se	t	p	LLCI	ULCI
-1.0000	.3468	.0406	8.5518	.0000	.2671	.4265
.0000	.2157	.0410	5.2620	.0000	.1351	.2963
1.0000	.0846	.0470	1.8010	.0725	-.0078	.1770

OUTCOME VARIABLE:

ZEP

Model Summary

R	R-sq	MSE	F	df1	df2	p
.9806	.9616	.0391	1401.6644	7.0000	392.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.1510	.0583	-2.5894	.0100	-.2657	-.0364
ZEO	.4586	.0134	34.3355	.0000	.4323	.4849
ZNC	.3191	.0149	21.4089	.0000	.2898	.3484
ZTL	.3812	.0138	27.5306	.0000	.3540	.4084
Int_1	.0282	.0099	2.8507	.0046	.0088	.0477
Int_2	-.0242	.0088	-2.7419	.0064	-.0415	-.0068
LogFA	.0719	.0495	1.4523	.1472	-.0254	.1693
LogFS	.0195	.0263	.7394	.4601	-.0323	.0712

Product terms key:

Int_1	:	ZEO	x	ZTL
Int_2	:	ZNC	x	ZTL

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0008	8.1265	1.0000	392.0000	.0046
M*W	.0007	7.5179	1.0000	392.0000	.0064

Focal predict: ZEO (X)
Mod var: ZTL (W)

Conditional effects of the focal predictor at values of the moderator(s):

ZTL	Effect	se	t	p	LLCI	ULCI
-1.0000	.4304	.0185	23.2618	.0000	.3940	.4668
.0000	.4586	.0134	34.3355	.0000	.4323	.4849
1.0000	.4868	.0145	33.5605	.0000	.4583	.5153

Focal predict: ZNC (M)
Mod var: ZTL (W)

Conditional effects of the focal predictor at values of the moderator(s):

ZTL	Effect	se	t	p	LLCI	ULCI
-1.0000	.3433	.0174	19.7451	.0000	.3091	.3774
.0000	.3191	.0149	21.4089	.0000	.2898	.3484
1.0000	.2949	.0172	17.0977	.0000	.2610	.3288

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Conditional direct effect(s) of X on Y:

ZTL	Effect	se	t	p	LLCI	ULCI
-1.0000	.4304	.0185	23.2618	.0000	.3940	.4668
.0000	.4586	.0134	34.3355	.0000	.4323	.4849
1.0000	.4868	.0145	33.5605	.0000	.4583	.5153

Conditional indirect effects of X on Y:

INDIRECT EFFECT:

ZEO	->	ZNC	->	ZEP	
ZTL		Effect	BootSE	BootLLCI	BootULCI
-1.0000		.1190	.0175	.0852	.1556
.0000		.0688	.0149	.0406	.0996
1.0000		.0250	.0157	-.0045	.0576

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis:

ZTL ZEO ZNC

----- END MATRIX -----

Appendix VIII: Test for Moderation and Moderated Mediation – Model 59 (For Dataset without Outliers)

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.0 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

Model : 59
Y : ZEP
X : ZEO
M : ZNC
W : ZTL

Covariates:
LogFA LogFS

Sample
Size: 394

OUTCOME VARIABLE:
ZNC

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.5506	.3031	.4394	33.7540	5.0000	388.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.8528	.1900	4.4880	.0000	.4792	1.2264
ZEO	.2032	.0429	4.7401	.0000	.1189	.2875
ZTL	.3376	.0436	7.7475	.0000	.2519	.4232
Int_1	-.0637	.0278	-2.2932	.0224	-.1182	-.0091
LogFA	-.1192	.1662	-.7172	.4737	-.4461	.2076
LogFS	-.2725	.0873	-3.1225	.0019	-.4441	-.1009

Product terms key:

Int_1 : ZEO x ZTL

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0094	5.2586	1.0000	388.0000	.0224

Focal predict: ZEO (X)
Mod var: ZTL (W)

Conditional effects of the focal predictor at values of the moderator(s):

ZTL	Effect	se	t	p	LLCI	ULCI
-.8536	.2575	.0485	5.3106	.0000	.1622	.3529
.0000	.2032	.0429	4.7401	.0000	.1189	.2875
.8536	.1489	.0495	3.0095	.0028	.0516	.2461

```

*****
OUTCOME VARIABLE:
  ZEP

Model Summary
      R      R-sq      MSE      F      df1      df2      p
.9679   .9369   .0386   818.3795   7.0000   386.0000   .0000

Model
      coeff      se      t      p      LLCI      ULCI
constant -.0936   .0581  -1.6117   .1078   -.2078   .0206
ZEO       .4661   .0135  34.4266   .0000   .4395   .4927
ZNC       .3083   .0152  20.2942   .0000   .2784   .3382
ZTL       .3797   .0139  27.3083   .0000   .3523   .4070
Int_1     .0179   .0115   1.5529   .1213   -.0048   .0405
Int_2     .0147   .0154   .9501   .3426   -.0157   .0450
LogFA     .0760   .0494   1.5394   .1245   -.0211   .1731
LogFS     .0188   .0262   .7193   .4724   -.0326   .0703

Product terms key:
  Int_1      :      ZEO      x      ZTL
  Int_2      :      ZNC      x      ZTL

Test(s) of highest order unconditional interaction(s):
      R2-chng      F      df1      df2      p
X*W      .0004      2.4115      1.0000      386.0000      .1213
M*W      .0001      .9027      1.0000      386.0000      .3426

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Conditional direct effect(s) of X on Y:
      ZTL      Effect      se      t      p      LLCI      ULCI
-.8536   .4508   .0182   24.8341   .0000   .4151   .4865
.0000    .4661   .0135   34.4266   .0000   .4395   .4927
.8536    .4813   .0152   31.7076   .0000   .4515   .5112

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
  ZEO      ->      ZNC      ->      ZEP

      ZTL      Effect      BootSE      BootLLCI      BootULCI
-.8536   .0762   .0177   .0402   .1107
.0000    .0626   .0154   .0323   .0937
.8536    .0478   .0177   .0137   .0833

---

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis:
      ZTL      ZEO      ZNC
----- END MATRIX -----

```

Appendix IX: Sampling Frame for Manufacturing Firms in Nairobi

BUILDING MINING AND CONSTRUCTION

NO. FIRM

- 1 Athi River Mining Ltd
- 2 Bamburi Cement Ltd
- 3 Bamburi Special Products Ltd
- 4 Boyama Building Materials
- 5 Central Glass Industries Ltd
- 6 Corrugated Sheets Ltd
- 7 Flamingo Tiles (K) Ltd
- 8 Glenn Investments Ltd
- 9 International Energy Technik Ltd
- 10 International Green Structures Manufacturing Kenya Ltd
- 11 Kenbro Industries Ltd
- 12 Kenya Builders & Concrete Ltd
- 13 Koto Housing Kenya Ltd
- 14 Orbit Enterprises Ltd
- 15 Saj Ceramics Ltd
- 16 Sandblasting & Coatings (Kenya) Ltd
- 17 Savannah Cement Ltd
- 18 Teita Estate Ltd
- 19 Tile & Carpet Centre Ltd
- 20 Vallem Construction Ltd
- 21 Wirji Vishram Patel & Sons
- 22 Amotech East Africa
- 23 ASP Company Ltd
- 24 Space and Style Ltd

CHEMICAL AND ALLIED

NO. FIRM

- 1 Bayer East Africa Ltd
- 2 Beiersdorf East Africa Ltd
- 3 Blue Ring Products Ltd
- 4 BOC Kenya Ltd
- 5 Buyline Industries Ltd
- 6 Canon Chemicals Ltd
- 7 Carbacid (CO₂) Ltd
- 8 Chemraw EA Ltd
- 9 Chrysal Africa Ltd
- 10 Cooper K-Brands Ltd
- 11 Crop Nutrition Laboratory Services Ltd
- 12 Decase Chemicals Ltd
- 13 Deluxe Inks Ltd

- 14 Desbro Kenya Ltd
- 15 Diversey Eastern & Central Africa Ltd
- 16 Dow Chemicals East Africa Ltd
- 17 Enviro-Hub Holdings Ltd
- 18 Flame Tree Africa
- 19 Galaxy Paints & Coating Co. Ltd
- 20 H.B Fuller Kenya Ltd
- 21 Henkel Kenya Company Ltd
- 22 Henkel Polymer Company Ltd
- 23 Highchem East Africa Ltd
- 24 Hi-Tech Inks and Coatings
- 25 Jumbo Chem Kenya Ltd
- 26 Kel Chemicals Ltd
- 27 Kemia International Ltd
- 28 Ken Nat Ink & Chemicals Ltd
- 29 Kip Melamine Co. Ltd
- 30 L'Oreal East Africa Ltd
- 31 Maroo Polymers Ltd
- 32 Match Masters Ltd
- 33 MEA Ltd
- 34 Metoxide Africa Ltd
- 35 Murphy Chemicals Ltd
- 36 Norbrook Kenya Ltd
- 37 Polychem Easy Africa
- 38 Procter & Gamble East Africa Ltd
- 39 Protea Chemicals Kenya Ltd
- 40 PZ Cussons EA Ltd
- 41 Questa Care Ltd
- 42 Reckitt Benckiser (E.A) Ltd
- 43 Revolution Stores Ltd
- 44 Rumorth Group of Companies Ltd
- 45 Rutuba Bio Agri & Organic Fertilizer Co. Ltd
- 46 Sanergy
- 47 Sanvoks Industries Ltd
- 48 SC Johnson and Son Kenya (Formerly Sara Lee)
- 49 Seweco Paints Ltd
- 50 Syngenta East Africa Ltd
- 51 Synresins Ltd
- 52 Tri-Clover Industries (K) Ltd
- 53 Twiga Chemicals Industries Ltd
- 54 Unilever East Africa
- 55 Unumed Ltd
- 56 Valencia Cosmetics Ltd
- 57 Vitafoam Products Ltd

- 58 Waridi Creations Ltd
- 59 Westminster Paints and Resins Ltd
- 60 Anffi Kenya Ltd
- 61 Kansai Plasscon Kenya Ltd
- 62 Style Industries Ltd

ENERGY ELECTRICAL AND ELECTRONICS

NO. FIRM

- 1 African Cables Ltd
- 2 Aial Group Limited
- 3 Amedo Centre Kenya Ltd
- 4 Asano International Ltd
- 5 Assa Abloy East Africa Ltd
- 6 AUCUMA Digital Technology Africa Ltd
- 7 Avery East Africa Ltd
- 8 Baumann Engineering Ltd
- 9 Centurion System Ltd
- 10 Daima Energy Services Ltd
- 11 East African Cables Ltd
- 12 Farm Refrigeration & Electricals Systems Ltd
- 13 Holman Brothers (EA) Ltd
- 14 Ibera Africa Power (EA) Ltd
- 15 Kenwest Cables Ltd
- 16 Kenya Power Ltd
- 17 Libya Oil Kenya Ltd
- 18 Manufacturers & Suppliers (K) Ltd
- 19 Marshall Fowler (Engineers)
- 20 Metlex International Ltd
- 21 Metsec Cables Ltd
- 22 Mustek East Africa Ltd
- 23 Nationwide Electrical Industries Ltd
- 24 Optimum Lubricants Ltd
- 25 Patronics Services Ltd
- 26 PCTL Automation Ltd
- 27 Pentagon Agencies
- 28 Phillips EA Ltd
- 29 Powerex Lubricants Ltd
- 30 Premier Solar Solutions Ltd
- 31 Protel Studios
- 32 Repelectric (K) Ltd
- 33 Scales & Software (K) Ltd
- 34 Schneider Electric Ltd
- 35 Siera Cables East Africa
- 36 Socabelec (EA) Ltd

- 37 Solar Power & Infrastructure Limited
- 38 Specialised Power Systems Ltd
- 39 Summit Energy Systems Ltd
- 40 Synergy Lubricants Solutions
- 41 Synergy-Pro
- 42 Virtual City Ltd
- 43 Vivo Energy Kenya Ltd
- 44 Azuri Technologies Kenya Ltd
- 45 Solimpexs Africa Ltd

FOOD AND BEVERAGE

NO. FIRM

- 1 Africa Spirits Ltd
- 2 Afrimac Nut Company
- 3 Agri Pro-Pak Ltd
- 4 Agriner Agricultural Development
- 5 All -Mahra Industries Ltd
- 6 Almasi Beverages Ltd
- 7 Alpha Fine Foods Ltd
- 8 Alpha Grain Millers Ltd
- 9 Alphine Coolers Ltd
- 10 Aquamist Ltd
- 11 Aviano East Africa Ltd
- 12 Bakers Corner Ltd
- 13 Belfast Millers Ltd
- 14 Bio Food Products Ltd
- 15 British American Tobacco Kenya Ltd
- 16 C. Dormans Ltd
- 17 C.Czarnikow Sugar East Africa Ltd
- 18 Cadbury Kenya Ltd
- 19 Candy Kenya Ltd
- 20 Capel Food Ingredients
- 21 Chirag Kenya Ltd
- 22 Crown Beverages
- 23 Danone Baby Nutrition Africa and Overseas
- 24 DPL Festive Ltd
- 25 East African Breweries Ltd
- 26 East African Sea Food Ltd
- 27 East African Seed Co. Ltd
- 28 Edible Oil Products Ltd
- 29 Elekea Ltd
- 30 Elle Kenya Ltd
- 31 Erdemann Co. (K) Ltd
- 32 Europack Industries Ltd

- 33 Excel Chemicals Ltd
- 34 Farmers Choice Ltd
- 35 Fresh Produce Exporters Association of Kenya
- 36 Frigoken Ltd
- 37 FRM EA Packers Ltd
- 38 General Mills East Africa Ltd
- 39 Giloil Company Ltd
- 40 Glaciers Products (Amor Mia Dairy, Mio
- 41 Global Fresh Ltd
- 42 Golden Africa Kenya Limited
- 43 Gonas Best Ltd
- 44 Green Forest Foods Ltd
- 45 Hetiage Foods Kenya Ltd
- 46 Honey Care Africa Ltd
- 47 Insta Products (EPZ) Ltd
- 48 Jambo Biscuits (K) Ltd
- 49 Jambo East Africa Ltd
- 50 Kamili Packers Ltd
- 51 Kenafriic Bakery
- 52 Kenafriic Industries Ltd
- 53 Kenchic Ltd
- 54 Kenya Horticultural Exporters (1977)
- 55 Kenya Nut Company Ltd
- 56 Kenya Sweets Ltd
- 57 Kenya Wine Agencies Ltd
- 58 Kenya Seed Company Ltd
- 59 Kevian Kenya Ltd
- 60 Kirinyaga Flour Mills
- 61 Koba Waters Ltd/Bromhill Springs Water
- 62 Kuguru Food Complex Ltd
- 63 Kwaliti Candies & Sweets Ltd
- 64 Manji Food Industries Ltd
- 65 Mastermind Tobacco (K) Ltd
- 66 Melvin March International
- 67 Miritini Kenya Ltd
- 68 Monwalk Investments Ltd
- 69 Morani Ltd
- 70 Nairobi Bottlers Ltd
- 71 Nairobi Flour Mills Ltd
- 72 NAS Airport Services Ltd
- 73 Nestle Foods Kenya Ltd
- 74 New Kenya Co-operative Creameries Ltd
- 75 Norda Industries Ltd
- 76 Palmhouse Diaries Ltd

- 77 Patco Industries Ltd
- 78 Pearl Industries Ltd
- 79 Pembe Flour Mills Ltd
- 80 Pernod Ricard Kenya Ltd
- 81 Platinum Distillers Ltd
- 82 Premier Flour Mills Ltd
- 83 Premier Food Industries Ltd
- 84 Pristine International Ltd
- 85 Proctor & Allan (EA) Ltd
- 86 Promasidor Kenya Ltd
- 87 Razco Ltd
- 88 Sameer Agriculture & Livestock (K) Ltd
- 89 Selecta Kenya Gmbh and Sons, KG
- 90 Sky Foods
- 91 Social Bites Ltd
- 92 Spice World Ltd
- 93 Stawi Foods and Fruits Ltd
- 94 Supa Snacks Ltd
- 95 Tropikal Brand (Africa) Ltd
- 96 Trufoods Ltd
- 97 Ultravetis East Africa Ltd
- 98 Unga Group Ltd
- 99 Usafi Services Ltd
- 100 Valuepak Foods
- 101 Vava Coffee Ltd
- 102 Vert Ltd
- 103 Victoria Juice Company Ltd
- 104 Victory Farms Limited 106 Thigiri Lane
- 105 W.E. Tilley (muthaiga) Ltd
- 106 Wanji Food Industries Ltd
- 107 West African Seasoning Co. Ltd
- 108 Winnie's Pure Health
- 109 Wrigley Company (EA) Ltd
- 110 Zheng Hong (K) Ltd
- 111 Afribon (K) Ltd
- 112 Bdelo Ltd
- 113 Confini Ltd
- 114 Kedsta Investments Ltd
- 115 Kwale International Company Ltd
- 116 Salim Wazarani Kenya Company Ltd
- 117 SBC Kenya Ltd
- 118 Sigma Supplies Ltd
- 119 Zeelandia East Africa Limited

FRESH PRODUCE**NO. FIRM**

- 1 Aquila Development Co. Ltd
- 2 From Eden
- 3 Kankam Exporters Ltd
- 4 Mahee Flowers
- 5 Purple Iris Africa

LEATHER AND FOOTWEAR**NO. FIRM**

- 1 Azus Leather Limited
- 2 Budget Shoes Ltd
- 3 C & P Shoe Industries Ltd
- 4 Sandstorm Africa Ltd
- 5 Umoja Rubber Products Ltd
- 6 Zingo Investments Ltd

METAL AND ALLIED**NO. FIRM**

- 1 Agro-Irrigation & Pump
- 2 Allied East Africa Ltd
- 3 Alloy Steel Casting Ltd
- 4 Ashut Engineer Ltd
- 5 ASL Ltd- Steel Division
- 6 ASL Packaging Limited
- 7 Athi River Steel Plant Ltd
- 8 City Engineering Works (K) Ltd
- 9 Davis and Shirliff Ltd
- 10 Devki Steel Mills Ltd
- 11 Doshi & Company Hardware Enterprises Ltd
- 12 East African Foundry Works (K) Ltd
- 13 East African Glassware Mart Ltd
- 14 Easy Clean Africa Ltd
- 15 Farm Engineering Industries Ltd
- 16 Fine Engineering Works Ltd
- 17 Friendship Container Manufacturer Ltd
- 18 Heavy Engineering Ltd
- 19 Hebatullah Brothers Ltd
- 20 Insteel Ltd
- 21 Kaluworks Ltd
- 22 Kens Metal Industries
- 23 Marvel Lifestyle Ltd
- 24 Mecal Ltd
- 25 Metal Crowns Ltd

26	Mitsubishi Corporation Nairobi
27	Modulec Engineering Systems Ltd
28	Nail & Steel Products Ltd
29	Napro Industries Ltd
30	Orbit Engineering Ltd
31	Richfield Engineering Ltd
32	Safari Mitek Ltd
33	Siya Industries (K) Ltd
34	SKF Kenya Ltd
35	Skyline Holdings Ltd
36	St. Theresa Industries
37	Steel Structures Ltd
38	Steelmakers Ltd
39	Steelwool (Africa) Ltd
40	Sufuria World Ltd
41	Superfit Steelcon Ltd
42	Technoconstruct Kenya Ltd
43	Tononoka Rolling Mills Ltd
44	Towertech Africa Ltd
45	Varoma tech Ltd
46	Viking Industries Ltd
47	Warren Enterprises Ltd
48	Welding Alloys Ltd
49	Wire Products Ltd
50	Zenith Steel Fabricators Ltd
51	Crystal Industries Ltd
52	Kheshi Dharamshi & Co. Ltd

MOTOR VEHICLE ASSEMBLERS

NO. FIRM

1	Alamdar Trading Company Ltd
2	Associated Battery Manufacturers (EA) Ltd
3	Auto Ancillaries Ltd
4	Auto Industries Ltd
5	Auto Springs East Africa Ltd
6	Autofine Filters & Seals Ltd
7	Azad Automobile Trimmings Ltd
8	Banbros Ltd
9	Bhachu Industries Ltd
10	BMG Holdings Ltd
11	Choda Fabricators Ltd
12	Chui Auto Spring Industries Ltd
13	Cica Motors
14	Dodi Autotech (K) Ltd

- 15 Foton East Africa Ltd
- 16 Geneal Motors East Africa Ltd
- 17 Harveer Bus Body Builders Ltd
- 18 Honda Motorcycle Kenya Ltd
- 19 Impala Glass Industries Ltd
- 20 Kenya Coach Industries Ltd
- 21 Kenyon Ltd
- 22 King Bird (K) Ltd
- 23 Labh Singh Harnam Singh Ltd
- 24 Load Trailers
- 25 Mann Manufacturing Co. Ltd
- 26 Mash East Africa Ltd
- 27 Master Fabricators Ltd
- 28 Megh Cushion Industries Ltd
- 29 Mobius Motors Kenya Ltd
- 30 Mutsimoto Motor Company Ltd
- 31 Pipe Manufacturers Ltd
- 32 Plateau Motors Ltd
- 33 Rockey Africa Limited
- 34 Scania East Africa Ltd
- 35 Simba Corporation Limited
- 36 Sohansons Ltd
- 37 Songyi Motocycles International Ltd
- 38 Soroya Motors Spares
- 39 Theevan Enterprises Ltd
- 40 Toyota Kenya Ltd
- 41 Toyota Tshusho East Africa Ltd
- 42 Unifilters Kenya Ltd
- 43 Varsani Brake Linings Ltd
- 44 King Finn Kenya Ltd

PAPER AND BOARD

NO. FIRM

- 1 Allpack Industries Ltd
- 2 Associated Paper & Stationery Ltd
- 3 Autolitho Ltd
- 4 Avery Dennison Kenya Ltd
- 5 Bag and Envelop Converters
- 6 Bags & Balers Manufacturers (K) Ltd
- 7 Brand Printers Ltd
- 8 Carton Manufacturers Ltd
- 9 Cempack Solutions Ltd
- 10 Chandaria Industries Ltd
- 11 Colour Labels Ltd

- 12 Colour Packaging Ltd
- 13 Colourprint Ltd
- 14 D.L Patel Pess Kenya Ltd
- 15 Dodhia Packaging Ltd
- 16 East Africa Packaging Industries Ltd
- 17 Economic Industries Ltd
- 18 Elegant Printing Works Ltd
- 19 Elite Offset Ltd
- 20 English Press Ltd
- 21 Essential Manufacturing
- 22 Euro Packaging Ltd
- 23 Fortunes Printers & Stationers Ltd
- 24 Franciscan Kolbe Press
- 25 General Printers Ltd
- 26 Green Pencils Ltd
- 27 Guaca Stationers Ltd
- 28 International Paper & Board Supplies Ltd
- 29 Kartasi Industries Ltd
- 30 Kenafic Diaries Manufacturers Ltd
- 31 Kenya Stationers Ltd
- 32 Kim-Fay East Africa Ltd
- 33 Kul Graphics Ltd
- 34 Manipal International Printing Press Ltd
- 35 MFI Ultra Print Ltd
- 36 Modern Lithographic (K) Ltd
- 37 Nation Media Group Ltd- Printing Plant
- 38 Ndalex Digital Technology
- 39 Palmy Enterprises
- 40 Paper House of Kenya Ltd
- 41 Paperbags Ltd
- 42 Pressmaster Ltd
- 43 Prime Cartons Limited
- 44 Printing Services Ltd
- 45 Printpak Multi Packaging Ltd
- 46 Printwell Industries Ltd
- 47 Propack Kenya Ltd
- 48 Punchlines Ltd
- 49 Ramco Printing Works Ltd
- 50 Regal Press Kenya Ltd
- 51 Shri Krishana Overseas Ltd
- 52 Sintel Security Print Solution Ltd
- 53 Skannem Interlabels Nairobi Ltd
- 54 Sketchers Design Promoters Ltd
- 55 Soloh Worldwide Inter-Enterprises Ltd

- 56 Standard Group Ltd
- 57 Taws Ltd
- 58 Tetra Pak Ltd
- 59 The Print Exchange
- 60 Tissue Kenya Ltd
- 61 Twiga Stationers & Printers Ltd
- 62 United Bags Manufacturers Ltd

PHARMACEUTICAL AND MEDICALS

NO. FIRM

- 1 Alpha Medica Manufacturers Ltd
- 2 Autosterile (EA)
- 3 Benmed Pharmaceuticals Ltd
- 4 Beta Healthcare International Ltd
- 5 Biodeal Laboratories Ltd
- 6 Biopharma Ltd
- 7 Dawa Ltd
- 8 Elys Chemicals Industries Ltd
- 9 Glaxo Smithkline Kenya Ltd
- 10 KAM Industries
- 11 Kaolin Crowners Company Ltd
- 12 Laboratory & Allied Ltd
- 13 Medivet Products Ltd
- 14 Osschemie (K) Ltd
- 15 Pharm Access Africa Ltd
- 16 Pharmaceutical Manufacturing Co. (K) Ltd
- 17 Regal Pharmaceuticals Ltd
- 18 Skylight Chemicals Ltd
- 19 Sosure AFRipads Ltd
- 20 Vetcare Kenya Ltd
- 21 Zain Pharmaceuticals

PLASTIC AND RUBBER

NO. FIRM

- 1 ACME Containers Ltd
- 2 Afro Plastics (K) Ltd
- 3 A-One Plastics Ltd
- 4 Betatrad (K) Ltd
- 5 Bobmil Industries Ltd
- 6 Brush Manufacturers Ltd
- 7 Canaaneast Company Ltd
- 8 Cocorico Investment Ltd
- 9 Complast Industries Ltd

- 10 Coninx Industries Ltd
- 11 Dilpack Kenya Ltd
- 12 Dune Package Ltd
- 13 Dynaplas Ltd
- 14 Elgitread (Kenya) Ltd
- 15 Elgon Kenya Ltd
- 16 Eslon Plastics of Kenya Ltd
- 17 Finlay Brushware Ltd
- 18 Five Star Industries Ltd
- 19 Genral Platics Ltd
- 20 Hi-Plast Ltd
- 21 Jamlam Industries Ltd
- 22 Jay Giriraj Industries
- 23 Jumbo Quality Products
- 24 Just Plastics Ltd
- 25 Kamba Manufacturing (1986) Ltd
- 26 Kenpoly Manufacturers Ltd
- 27 Kenrub Ltd
- 28 Kinpash Enterprises Ltd
- 29 Kquality Packaging House Ltd
- 30 L.G Harris & Co. Ltd
- 31 Laneeb Plastic Industries Ltd
- 32 Malplast Industries Ltd
- 33 Metro Plastics Kenya Ltd
- 34 Nairobi Plastics Ltd
- 35 Packaging Industries Ltd
- 36 Packaging Masters Ltd
- 37 Plast Packaging Industries Ltd
- 38 Plastic Electricons
- 39 Plastics &Rubber Industries Ltd
- 40 Polyblend Ltd
- 41 Polyflex Industries Ltd
- 42 Polythene Industries Ltd
- 43 Premier Industries Ltd
- 44 Prosel Ltd
- 45 RitePak Limited
- 46 Rubber Products Ltd
- 47 Rushabh Industries Ltd
- 48 Safepak Ltd
- 49 Sameer Africa Ltd
- 50 Sanpac Africa Ltd
- 51 Signode Packaging Systems Ltd
- 52 Silafrica Kenya Ltd
- 53 Silpack Industries Ltd

- 54 Singh Retread Ltd
- 55 Smartpack Limited
- 56 Sols Inclination Ltd
- 57 Solvochem East Africa Ltd
- 58 Springbox Kenya Ltd
- 59 Styroplast Ltd
- 60 Super Manufacturers Ltd
- 61 Techpak Industries Ltd
- 62 Top Pak Ltd
- 63 Torrent East Africa Ltd
- 64 Treadsetters Tyres Ltd
- 65 Uni-Plastics Ltd
- 66 Vectus Kenya Ltd

TEXTILES AND APPARELS

NO. FIRM

- 1 Adpak International Ltd
- 2 Africa Apparels EPZ LTD
- 3 African Cotton Industries Ltd
- 4 Akinyi Odongo
- 5 Alltex EPZ Ltd
- 6 Alpha Knits Ltd
- 7 Beberavi Collections Ltd
- 8 Blue Waves Enterprises Ltd
- 9 Chalange Industries Ltd
- 10 Dharmashi & Co. Ltd
- 11 Ethical Fashion Artisons EPZ Ltd
- 12 Fantex (K) Ltd
- 13 Insight Kenya
- 14 Kema (EA) Ltd
- 15 Kenya Tents Ltd
- 16 Kenya Trading (EPZ) Ltd
- 17 Kikoy Co. Ltd
- 18 Kikoy Mall EPZ Ltd
- 19 Le Stud Ltd
- 20 Manchester Outfitters
- 21 Midco Textiles (EA) Ltd
- 22 Mills Industries Ltd
- 23 Ngecha Industries Ltd
- 24 Oriental Mills Ltd
- 25 Panah Ltd
- 26 Penny Galore Ltd
- 27 Spin Knit Ltd
- 28 Spinners & Spinners Ltd

- 29 Straightline Enterprises
- 30 Sunam Shakti
- 31 Sunflag Textile & Knitwear Mills Ltd
- 32 Targo Industries Ltd
- 33 TSS Spinning and Weaving Ltd
- 34 United Aryan (EPZ) Ltd
- 35 Vajas Manufacturers Ltd
- 36 Wildlife Works (EPZ) Ltd
- 37 Kamyn Industries Ltd

TIMBER WOOD AND FURNITURE

NO. FIRM

- 1 African Retail Traders
- 2 Budget Furniture Ltd
- 3 Contrive Industries Ltd
- 4 Economic Housing Group Ltd
- 5 Fine Wood Works Ltd
- 6 Fun Kidz
- 7 Furniture International Ltd
- 8 House of Sahara Enterprises Limited
- 9 Kenya Wood Products Ltd
- 10 Little Cribs Ltd
- 11 Newline Ltd
- 12 Panesar's Kenya Ltd
- 13 PG Bison (K) Ltd
- 14 Rosewood Furniture Manufacturers Ltd
- 15 Shamco Industries Ltd
- 16 Timsales Ltd
- 17 Wood Makers (K) Ltd
- 18 Woodtex Kenya Ltd