ENTREPRENEURIAL DRIVE AND PERFORMANCE OF VALUE-SYSTEM ACTORS IN KENYA'S LEATHER INDUSTRY

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Entrepreneurial Drive and Performance of Value-system Actors Kenya's Leather Industry

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

Signature……………………………… Date...……………………………

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This thesis has been submitted for examination with our approval as the University Supervisors**.**

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DEDICATION

I wish to dedicate this work to my children, Grace Muthoni, Amani Muthoni, Makena Wambui and Victor Muchiri, and to my niece Michelle Muthoni. You have been the inspiration in my studies and I wish that you similarly be inspired to work hard, study, love and contribute to society.

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All glory an honour be to God.

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LIST OF ABBREVIATIONS AND ACRONYMS

AGOA	African Growth and Opportunity Act
AHITI	Animal Health and Training Institute
AI	Artificial Intelligence
CBD	Central Business District
CEO	Chief Executive Officer
COMESA	Common Market for Eastern and Southern Africa
DeKUT	Dedan Kimathi University of Technology
EC	Entrepreneurial Competence
ED	Entrepreneurial Drive
EDA	Exploratory Data Analysis
EFA	Exploratory Factor Analysis
EO	Entrepreneurial Orientation
GDP	Gross Domestic Product
GEDI	Global Entrepreneurship Development Institute
GEM	Global Entrepreneurship Monitor
ICT	Information and Communication Technology
IoT	Internet of Things
ITC	International Trade Centre
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KAM	Kenya Association of Manufacturers
KIRDI	Kenya Industrial Research and Development Institute
KITI	Kenya Industrial Training Institute
KLDC	Kenya Leather Development Council
KM	Kariokor Market
KMO	Kaiser-Mery-Olkin Measure of Sampling Adequacy
KNBS	Kenya National Bureau of Statistics
LAEA	Leather Articles Entrepreneurs Association

MOIT&C	Ministry of Industrialization Trade and Cooperatives
MSE	Micro and Small Enterprise
MSME	Micro, Small and Medium Enterprises
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
R&D	Research and Development
RDS	Regional Design Studio
RoK	Republic of Kenya
SDG	Sustainable Development Goals
SEM	Structural Equation Modeling
SME	Small and Medium Enterprise
SPSS	Statistical Package for Social Scientists
SSA	Sub-Saharan Africa
TPCSI	Training and Production Center for the Shoe Industry
TU-K	Technical University of Kenya
UN	United Nations
UNDP	United Nations Development Programme
UNDESA	United Nations Department of Economic and Social Affairs
UNIDO	United Nations Industrial Development Organization
VAT	Value Added Tax
WEF	World Economic Forum
WTO	World Trade Organization

OPERATIONAL DEFINITION OF TERMS

Calculated risk-taking	The entrepreneurial orientation dimension meaning propensity for business venturing that has elements of considered commitment of significant resources for uncertain outcomes or in uncertain environments (Rauch, Wiklund, Lumpkin & Frese, 2009; Zhao, Seibert & Lumpkin, 2010).
Creating	The entrepreneurial competence dimension meaning conceptual and behavioural competence of analyzing and synthesizing ideas to understand relationships between components and develop novel combinations of seemingly unrelated concepts (Lans, Vestergen & Mulder, 2011).
Entrepreneur	An individual who possesses change-oriented explorative and exploitative traits, and applies them in a dynamic process to create new user value by commercial introduction of an innovation (Bjerke, 2007; Kuratko, 2014).
Entrepreneurial Competence	The behavioural characteristic of an individual that expresses or actualizes entrepreneurial intentions. Entrepreneurial competence is described as a construct comprising dimensions of networking, pursuing, and creating (Lans *et al.*, 2011; Ng & Kee, 2013).
Entrepreneurial Drive	The propensity to act and competence to actualize entrepreneurship. It is the combination of individual orientation and competence characteristics that are expressed in

entrepreneurship (Ensley, Carland & Carland, 2000; Armstrong & Hird, 2009; Boag, 2014; Taylor, 2019).

Entrepreneurial Ecosystem The network of diverse and inter-linked actors or institutions in an industry that are exchanging products, knowledge or other resources used in development of innovative value for mutual sustainable advancement. This definition adapts work from general systems theory, entrepreneurship and industry economics. It is the network of (usually localized) industry actors that interact to collaboratively pursue industry competitiveness goals (Mele, Pels and Polese, 2010; Colapinto and Porlezza, 2012; Li, Zubielqui and O'Connor, 2015; Cohen, 2015; Valentinov & Chatalova, 2016).

Entrepreneurial Orientation The psychological or innate personality trait of an individual, seen as a propensity to act entrepreneurially. Entrepreneurial orientation is described as a construct with dimensions of vision for growth, recognition of opportunities and risk-taking propensity (Ensley *et al*., 2000; Armstrong & Hird, 2009; Rauch *et al.*, 2009; Gupta, 2019; Wasdani and Mathew, 2014; Acs *et al*. 2015).

Entrepreneurship The process of identifying business opportunities, bringing resources together, taking the risk and pursuing the identified opportunities and successfully initiate, growth-oriented business ventures, new or within an existing organization, to create value/benefits for personal or social welfare (Bjerke, 2007; Hisrich, Peters & Shepherd, 2009; Carlsson, Braunerhjelm, McKelvey, Olofsson, Persson & Ylinenpaa, 2013).

Industry Actors / Players Individuals and enterprises that participate in supporting or are engaged in activities and processes that transform and transfer value of the industry's product typically from production to disposal. They include organizations with production, processing, delivery (marketing), networking, research and regulatory roles, and who often have common performance goals (Porter, 1985).

Industry The system of interacting network of firms whose collective activities are aimed at providing an end-product for consumers. An industry is a number of firms or businesses related in offering certain products, serving similar consumer needs or have similar business activities. They include suppliers, producers, processers, marketeers, researchers and retailers in similar business activities (Investopedia, 2019).

Innovation The creation, development and implementation of new value or a system to deliver value and their exploitation as a usable technique or product that gives value. It includes new business products, methods and models (Bjerke, 2007; Kuratko, 2014).

Networking The entrepreneurial competence dimension meaning ability to identify sources and gather industry-influencing knowledge for value-chain activity decision-making (Lans, Verstegen & Mulder, 2011).

Opportunity recognition The entrepreneurial orientation dimension meaning perceiving of favourable chances for introduction of innovations in a processes, products, markets or systems (Wasadi and Mathew, 2014; Guo, Tang, Su and Katz, 2016).

Performance The desirable or planned outcomes of firms and industries. These include goals or achievements for firms and industries such as production quantity, production quality, productivity, sales, market share, profit, stakeholder satisfaction, innovation and growth in these dimensions, expressed in qualitative or quantitative measures (Shane and Venkataraman, 2001; Rauch, Wiklund, Lumpkin & Frese, 2009; Stephan, Hart & Drews, 2015).

Pursuing The entrepreneurial competence dimension of searching and taking innovation action to take advantage of performance improvement opportunities especially ahead of similar competing endeavours (Lans *et al.*, 2011).

Value-chain The sequence of firm-level activities by industry actors involved in delivering value to customers (Porter, 1985).

Value-system The chain of industry actors whose activities progressively and collectively add value to a product (though production, transformation, augmentation, delivery or support before consumption) constitute the value-system. The value-system consists of actors directly involved in value-addition on the core-product (in this case transformation of hides and skins to leather and leather product, including intermediate and final marketing), but also institutions and associations that directly support the core-product activities, such as research, policy regulation, industry networking and standards (ethical and/or quality control) associations ((Porter, 1985).

Vision for growth	An entrepreneurial orientation dimension meaning having future-oriented improvement goals aimed at developmental changes in the value-creation activities. In a firm, these changes are typically measured by performance indicators such as profitability, production quantities, production quality, productivity or efficiency, market share or other competitiveness measures (Ensley *et al*., 2000; Armstrong & Hird, 2009; Rauch *et al*., 2009).

ABSTRACT

Leather is a US$ 100 billion-a-year and growing industry globally of which Africa is a net importer of finished manufactured goods despite having a large share of the natural resources. Africa has one-fifth of global livestock population yet its contribution to value-addition in the global leather industry accounts for only 3.3%. Further, productivity and competitiveness of leather manufacturing is globally lower in the Common Market of Eastern and Southern Africa (COMESA) and Kenya in particular. Entrepreneurship has been recommended as an intervention for its potential to harness the employment, earnings, competitiveness and general socio-economic benefits of the leather industry in Kenya where majority of players are Micro Small and Medium Enterprises (MSMEs). This study adopted an ecosystem perspective and applied a mixed research design to explore entrepreneurial drive as a construct of principal decision-makers in Kenya's leather industry actors, and its hypothesized relationship with firm performance through innovation. The study carried out a mixed sampling of value-system actors associated with Nairobi-based members of the Leather Articles Entrepreneurs Association (LAEA) in Kenya's leather industry. A questionnaire was used in guided interviews to collect self-reported quantitative primary data on individual entrepreneurial orientation and competence traits of principal decision-makers and the innovation and performance outcomes of their businesses. Data analysis was performed using Statistical Package for Social Sciences (SPSS v.21). Research instrument validity and reliability were established using the Delphi technique and a pilot test on a separate sample of seventeen actors in the Kariokor Market leather cluster leading to improvements before the main study. Further exploratory analysis of the main study data clarified the variables under study to be in tandem with theoretical and empirical literature. Inferential analysis tested hypotheses on the relationship between entrepreneurial drive variables and performance of value-system actors through innovation. Demographic analysis showed the leather industry in Kenya to be dominated by small and micro enterprises led by an older generation of male owner-managers. Study respondents showed an above average belief in expression of measured entrepreneurial characteristics except risk-taking tendency and the performance outcome. The study empirically validated entrepreneurial drive as a second- and third-order uni-dimensional construct comprising entrepreneurial orientation and competence variables. Further, entrepreneurial drive and its antecedents were found to determine performance and this link was partially mediated by innovation. The results of this study provide an ecosystem perspective of understanding entrepreneurship for theory building, training of nascent and practicing entrepreneurs, and entrepreneurship development policy-making especially in a traditional factor-based industry with unrealized SME and economic development potential such as leather in Kenya. The study recommends the application of the entrepreneurial drive construct in theoretical understanding of entrepreneurship, the development of individual entrepreneurship for firm performance outcomes, and policies for entrepreneurial-ecosystem competitiveness and national economic benefits.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

This study sought to establish the relationship between an entrepreneurial drive of value-addition players in an industry (value-system) and their performance due to the importance of industries in a competitive global economic arena. The leather industry especially in Kenya is studied for its poor performance and unexploited potential in the manufacturing economic sector.

This chapter introduces the background to the study on the link between entrepreneurial drive and performance of value-system actors in Kenya's leather industry. It discusses the leather industry and identifies competitive opportunities from local and global perspectives. It discusses the value-system actors in the industry and their roles. It addresses the significance of entrepreneurial drive of actors across the industry in determining overall industry performance, identifying the problem to be solved, study objectives, hypothesis formulated for testing, justification for, scope and limitations of the study.

1.1.1 The Leather Industry

According to the United Nations, the leather is one of the most widely traded commodities in the world with global trade estimated at US$ 100 billion a year and growing (United Nations Industrial Development Organization [UNIDO], 2010). Africa owns a fifth of global livestock population, yet contributes only four percent of world leather production and only 3.3 percent of value addition to leather. Africa continues to import finished leather products such as shoes in volumes that exceed those locally manufactured, increasingly as second-hand/used items (UNIDO, 2010). Despite having potential, African countries are net importers of manufactured goods and exporters of raw or semi-processed goods as commodities where it has comparative advantages from natural resource factors and labour, especially in agro-based sectors such as leather and leather products (Mwinyihija, 2016; Dinh & Clarke, 2012; Banga, Kumar & Cobbina, 2015). Further productivity of leather manufacturing SMEs in the Common Market for East and Southern Africa (COMESA) countries was found to be lower than that observed in India and China. Thus the SMEs were uncompetitive and unable to meet demand (Mwinyihija, 2015). COMESA regional economic block recognized the need to promote value-addition through local processing of leather to increase incomes and reduce poverty (International Trade Centre [ITC], 2011). Studies in Africa's manufacturing (Dinh & Clarke, 2012), SSA's and Kenya's leather industry (Banga *et al.*, 2015; Mwinyihija, 2016) clearly articulate the important role entrepreneurship can play in such an SME-dominant and labour-intensive industry with unexploited global export potential.

Kenya's *Economic Survey 2018* (Kenya National Bureau of Statistics [KNBS], 2018) notes manufacturing grew only marginally in 2017 at 0.2% compared to 2.7% in 2016. Despite Kenya's manufacturing being seen as more successful in the region, the sector has contribution has decelerated from of 9.1% to 8.4% of GDP between 2016 and 2017 while exports are largely only to neighbouring countries and not to high income economies such as Europe (Dinh & Clarke, 2012; KNBS, 2018). Domestic production of finished leather products such as footwear has been on the decline due to import of secondhand footwear and other cheap non-leather substitutes (Hansen, Moon & Mogollon, 2015).

Kenya's leather industry is regarded as less competitive than countries such as Ethiopia in production cost efficiencies and other categories evaluated, except availability of raw materials (Mwinyihinja, 2015). Within the leather industry, vertical and horizontal linkages are weak with trading exchange lacking synergies, yet theory suggests industry-actor networks are crucial for knowledge and perception of entrepreneurial opportunities (Shane, 2000; Hansen *et al.*, 2015). Meanwhile, Kenya's manufacturing has remained at eleven per cent of GDP and yet to realize potential for export of commodities (KIPPRA, 2016; KNBS, 2015). At the same time, Kenya's balance of trade is unfavourable, with an export-import ratio declining from a high of 40.4 in 2016 to 34.8 in 2018 (KNBS, 2019a). Manufacturing of leather goods in Kenya in 2015 declined 12.2% due to a 16.3% drop in finished leather products on competition second-hand and substitute imports (Hansen *et al*., 2015; KNBS, 2015). According to the Kenya National Leather Policy Draft, value-addition in the leather industry declined from 7.16B in 2013 to 6.5B by 2019. Kenya produced 8.1M pairs of shoes versus demand 40M pairs by 2017, and this demand was projected to be 46.8M pairs of shoes by 2022 (MOALFC & KLDC, 2019). Despite this low performance, Kenya's leather industry had an estimated 14,000 employees in 2020. It has been observed that domestic consumption and export of competitive finished leather goods can reduce the import bill, act as a major foreign currency earner, create manufacturing and retail jobs and promote rural development (ITC, 2011; Mwinyihija, 2015; KNBS, 2015). The leather industry has been identified as one of the strategic industries that offer opportunity for Kenya's economic transformation and sustainable development in line with the country's Vision 2030. Enhancing value-addition in leather has potential for employing 35,000 people, contributing over US$ 200 million to GDP in addition to substituting a portion of the US$ 86million annual shoe imports by 2030 (KIPPRA, 2019).

Given the global and domestic market opportunity, the leather industry in Kenya has much potential for growth and contribution to national socio-economic welfare. Acs, Szerb & Autio (2015) argue that national economic resilience can be achieved through strengthening entrepreneurial ecosystems of start-ups. Audretsch (2007) asserts the need to develop an entrepreneurial society based on collective collaboration to address challenges of national economic development in the face of globalization. Entrepreneurship is seen as crucial in determining the competitiveness and therefore performance of firms, industries (and economies) in this dynamic global economy (Audretsch, 2007; Acs *et al.*, 2015). Mwihihinja (2016) asserts that Africa has to pay attention to the performance and support of SMEs in the leather industry for the continent to take advantage of opportunities in growing consumption of manufactured leather products. COMESA strategy for leather (ITC, 2011) identified the support roles played by different players in the industry such as government industry associations and financial institutions, among others. The strategy paper also summarizes the leather value-chain inputs and outputs.

The leather industry in Kenya is yet to realize its potential in terms of competitiveness. Bata Company which was the largest producer of footwear in Kenya has been declining production due to cheap second-hand (*Mitumba*) imports. Most of the leather-goods manufacturers are in Kenya are the vibrant Micro and Small Enterprises (MSE's) clustered around Kariokor market (Mwinyihija, 2015; Hansen *et al.*, 2015). According to Hansen *et al.*, (2015) and Mwinyhija (2016), Kenya's leather production consists mainly of 89% semi-processed "wet blue", 2% finished leather, 4% leather footwear, handbags and travel-wear and 5% raw hides and skins. According to the Kenya National Leather Development Policy (MOALFC & KLDC, 2019), Kenya's livestock population was 68.9M (23% cattle, 69% sheep & goats) in 2019 while the leather industry contributed only 0.9% of manufacturing GDP in Kenya compared to 8.5% in Ethiopia 3.1% in Italy and 1% in India. Leather exports declined from 22,397T (2014 -19 average) to 15,775T in 2019. Exports of the industry over ten years up to 2018 in Table 1.1 show a declining trend.

Table 1.1: Value of Leather-related Domestic Exports 2010 – 2018 (KES. '000,000')

	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Hides & Skins, undressed	11.383	107.839	504.238	134.121	125.571	123.595	170.563	51.050	66.133
Leather	4,191.6	7,207.8	7,036.0	8,491.1	7,597.1	6,222.0	4,605.3	5,088.3	4,420.4
Footwear	3,214.1	3,561.8	4,147.6	3,922.1	3,569.0	3,694.0	3,499.0	3,247.2	3,433.4

*Provisional

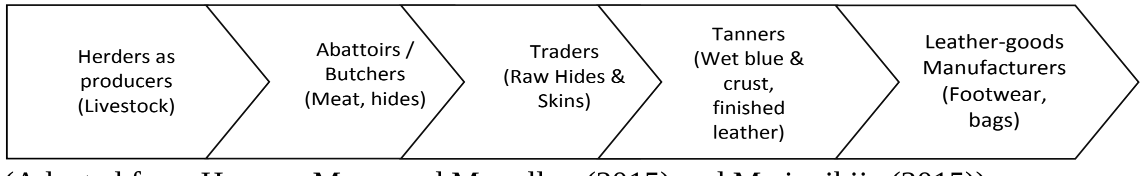
Source: KNBS (2019b)

Leather sub-sector of manufacturing in Kenya is expected to increase in value to USD $94 million through development of industrial clusters (MOIT&C, 2016). Entrepreneurship is one way of exploiting the Kenyan leather industry's potential thus harnessing its contribution to the country's social and economic development (Mwinyihija, 2015). Mwinyihija (2016) sees the need for efforts towards developing innovativeness amongst leather sector manufacturing SMEs in Africa for realization of unexplored opportunities in value addition and performance. Sub-Saharan Africa (SSA) economies can exploit the large base of natural resources available to produce manufactured products through integration of regional value chains especially in the leather industry (Banga *et al.* 2015). Hansen *et al.* (2015) assert the importance of developing innovation and entrepreneurship, especially in the manufacturing end of the value-chain, in order to create competitive advantages for Kenya's leather industry. Leather industry innovations can be in products (design, quality of finished and intermediate products), marketing (branding/differentiation) or new business models.

Despite the potential role of entrepreneurship in developing and enhancing the competitiveness in Kenya's leather industry, a clear focus on this entrepreneurial perspective has not received much attention in existing authoritative studies of the industry. Hansen *et al.* (2015) further stress the importance of collaborative networking through clustering and industry linkages of entrepreneurial firms, research and educational institutions, government and other institutions. Such industry linkages are week and unbalanced in Kenya's leather industry. Creation of these types of collaborative industry linkages is what this study refers to as an industry or entrepreneurial ecosystem. This study offers a way to investigate individual entrepreneurship and link it to industry-actor performance outcomes.

1.1.2 Value-system Actors in Kenya's Leather Industry

Mwinyihija (2015) discussed the leather industry value-chain in Kenya to consist of different 'strata' of actors with sub-groups, namely producers (livestock breeders), butchers, hides and skins traders, tanners, footwear and leather goods manufacturers. The study by Hansen *et al.* (2015) on the leather industry in Kenya and has delineated the industry based on product flow from supply of hides and skins to downstream value-addition activities. These are illustrated as the leather value-chain in Figure 1.1. Economic analysis practice classifies production and trade of hides and skins under agriculture sector while production of leather from tanning is a manufacturing activity (United Nations, 2008). Mwinyihija (2015) acknowledges the role of government in and regulation through policy intervention in determining the industry's socio-economic performance.



(Adapted from Hansen, Moon and Mogollon (2015) and Mwinyihija (2015))

Figure 1.1: The Leather Industry Value-chain

An examination of the value-addition actors along the industry's product flow (leather) needs to be complemented with other stakeholders with support roles such as policy regulation, research agents and industry associations to capture the entire industry ecosystem – or value-system. The entire collection of value-addition actors in leather therefore comprises the value-system as propounded by Michael Porter (1985). Given the aforementioned, this study considers the leather industry value-system boundaries to be defined by leather as a core-product whose actors have performance goals have this product as central.

1.1.3 The Concept of Performance

Performance is an oft-studied concept that is regarded as an important consequence business initiatives and activities (entrepreneurship, goals pursuit, production, marketing, etc.). Various entrepreneurship scholars have used performance as an eventual and desirable outcome of entrepreneurship in their studies (Rauch *et al.*, 2009; Al-Ansari, 2014; McMullan and Kenworthy, 2015).

Shane and Venkataraman (2001) argue that outcomes of entrepreneurship should include those for the entrepreneur, firms, industries and societies. The measures applied combine the three approaches of goal (goals implied by organizational members), systems resources (firm external and internal survival factors) and consistency with stakeholder benefits (satisfaction) as highlighted by Ming and Yang (2009) from existing literature. Stephan, Hart and Drews (2015) suggest that firm performance should be a multi-dimensional variable that includes not only economic value creation but also social value creation. Guo *et al.* (2016) used related items to measure SME performance, namely sales growth rate, market share growth, profit growth, productivity, return on assets and return on sales. Santos and Brito (2012) drew from stakeholder theory to develop a seven-dimension on performance as a manifestation of competitive advantage: profitability, growth, market value, customer satisfaction, employee satisfaction, environmental performance and social performance. Santos and Barito (2012) recommend further studies for generalizations to be made on organizational performance measurement.

According to Rauch *et al.* (2009), both archival and self-perceived performance measures (both financial and non-financial) have been used to study performance of firms, though the latter dominate research. Al-Ansari (2014) takes cognizance of objective (absolute value), perceptual (comparisons and expectations) and managerial self-reporting as measures of firm performance indicated in different studies. Sanchez (2012) used quantitative (financial) firm performance measures (sales growth, return on sales, cash flow, return on investment, net profit and growth in market share) compared with competitors as self-reported and judged by entrepreneurs on a Likert scale continuum. Al-Ansari (2014) measured business growth performance in both manufacturing and service industry SMEs using both qualitative (non-financial) and quantitative (financial) indicators in a self-reporting Likert-scale instrument. Qualitative indicators used by Al-Ansari (2014) included capacity to provide new products, services, and processes, ability to provide quality products and services, and customer satisfaction; while the quantitative measures were value of innovation patent award, sales growth, sales growth of innovation, profit growth, profit growth of innovation, return on investment, return on investment of innovation, and market share.

1.1.4 Entrepreneurial Drive

Scholars have established the significance of entrepreneurship finding and mitigating economic inefficiencies (Jain, 2011). David Audretsch in his 2007 book *The Entrepreneurial Society* has asserted that entrepreneurship is the means (missing link) to job creation, economic and social development in a globalized world where social trends are defined by knowledge rather than manufacturing. Bjerke (2007) has compared the importance of entrepreneurship to a movement like democracy.

In their analysis of entrepreneurial strategy for declining industries, Cassia, Fattore and Paleari (2006) discuss exploiting and resource opportunities as important for entrepreneurship to turn around declining industry fortunes. Cassia *et al.*, (2006) believe that entrepreneurship has to be understood from individual traits, its role, organizational outcomes and the 'habitat' or determining conditions. Thus opportunity recognition, explorative and exploitative risk-taking, and the resultant performance impact are important dimensions of entrepreneurship especially in the context of the competitiveness of a firm or industry.

Merriam-Webster Online Dictionary (2015) defines "drive" as a transitive verb can mean "to give shape or impulse to". In psychology, drive is the arousal that motivates an individual to act on an intense need or desire to be satisfied. It requires motivation; the ability to initiate and persist at a task and includes knowing (cognition) and seeking (behavior) (Boag, 2014; Taylor, 2019). In propounding their self -determination theory (SDT), Deci and Ryan (2000) reaffirm human needs as basic to understanding the human motivation to pursue goals while adding consideration of competence, autonomy and relatedness as key psychological needs. Desire, goals, competence and actions are significant antecedents of achievement or success. Explanation for entrepreneurial drive and its performance and innovation outcomes can therefore be found in psychological theories that address individual cognitive processes and motivation needs that lead to action.

Drive therefore implies action and this is only possible with needs that orient or incline human behaviour in a given direction, and appropriate competence to act on satisfying the needs (rather than building competence as a motivation). Entrepreneurial orientation, a psychological trait, is recognized as antecedent to growth, competitiveness and superior performance (Kraus, Rigtering, Hughes & Hosman, 2012). Entrepreneurial competence as an ability to use opportunities for creation of value that determines firm performance and competitiveness (Ng & Kee, 2013; Lans, Verstegen & Mulder, 2011). For purposes of this study, variables defining entrepreneurial drive are merged from those of individual characteristics related to psychological orientation and behavioural competence. The entrepreneur is then an individual who possesses explorative and exploitative traits, and applies them in a dynamic process to create new user value by commercial introduction of an innovation (Bjerke, 2007; Kuratko, 2014).

1.2 Statement of the Problem

Demand for genuine and high-quality finished leather goods is growing faster than supply due to global growth in population and disposable income. This supply deficit is expected to prevail globally (Hansen *et al*., 2015). With ninety percent of leather products exported in semi-finished form (as tanned wet blue), Kenya only captures a marginal share in the value from the USD 100$ billion global leather value-chain (UNIDO, 2010; ITC, 2011; Hansen *et al.,* 2015).

The paradox of an industry with great opportunity and potential being faced with poor performance in a competitive market therefore needs to be resolved. Despite recognition of the role of entrepreneurship in improving the competitiveness and performance of the manufacturing sector, this has not been adequately addressed, especially in the leather industry in Kenya. Mwinyihija (2015) called for holistic interventions that promote SME development in the leather sector in COMESA countries, among them Kenya, in order to address such observed challenges as lack of machinery, raw material availability, quality and cost, working capital and market problems. Entrepreneurial drive is an essential business capability for success in any industry given today's dynamics of globalized competition. This is especially the case in manufacturing such as in the leather industry. Entrepreneurship and the entrepreneurial capacity of individual actors in the industry therefore provides one possible solution to the market opportunity/potential versus industry performance and competitiveness challenge. While development of entrepreneurship in a labour-intensive and MSME-oriented industry has been recommended in past studies, little attention has been paid to the entrepreneurship intervention in more recent reports (KIPPRA, 2019; MOALFC & KLDC, 2019).

Despite its importance, there has been inadequate attention given to the role of entrepreneurship from an ecosystem perspective in factor-based industries that are the economic backbone of countries such as Kenya in Africa. Having an entrepreneurial drive gives industry actors the potential for recognizing opportunities for innovations that address observed challenges and therefore improve global competitiveness. However, the concept has not been adequately studied and therefore requires an analysis of its components and their relationship with desired entrepreneurial outcomes of innovation and firm performance. Understanding and developing the entrepreneurial drive of the industry actors and finding the link to performance in the leather industry could therefore be crucial in resolving the dilemma of un-competitiveness in the face of such high demand. This therefore study sought to analyze the factors of entrepreneurial drive, and relationship between entrepreneurial drive and performance in an industry such as leather in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The main objective of this study is to investigate the relationship between entrepreneurial drive and performance of value-system actors in Kenya's leather industry.

1.3.2 Specific Objectives

The specific objectives of this study were:

1. To determine the relationship between vision for growth as an entrepreneurial orientation of value-system actors and performance in Kenya's leather industry.
2. To determine the relationship between opportunity recognition as an entrepreneurial orientation of value-system actors and performance in Kenya's leather industry.
3. To determine the relationship between risk-taking propensity as an entrepreneurial orientation of value-system actors and performance in Kenya's leather industry.
4. To determine the relationship between networking as an entrepreneurial competence of value-system actors and performance in Kenya's leather industry.

5. To determine the relationship between pursuing as an entrepreneurial competence of value-system actors and performance in Kenya's leather industry.
6. To determine the relationship between creating as an entrepreneurial competence of value-system actors and performance in Kenya's leather industry.
7. To determine the mediating effect of innovation by value-system actors in the relationship between entrepreneurial drive and performance in Kenya's leather industry.

1.4 Research Hypotheses

Research hypotheses were based the objectives of the study which sought to investigate the relationship between variables of entrepreneurial drive and performance, and the mediating effect of innovation on the relationship between entrepreneurial drive and performance. These relationships. The relationship is founded on theoretical and empirical literature showing that entrepreneurial dispositions and behaviours lead to innovation and hence firm performance outcomes. The following research hypotheses were formulated:

H_{a1}: Vision for growth as an entrepreneurial orientation determines performance of value-system actors in Kenya's leather industry.

H_{a2}: Opportunity recognition as an entrepreneurial orientation determines performance of value-system actors in Kenya's leather industry.

H_{a3}: Calculated risk-taking as an entrepreneurial orientation determines performance of value-system actors in Kenya's leather industry.

H_{a4}: Networking as an entrepreneurial competence determines performance of value-system actors in Kenya's leather industry.

H_{a5}: Pursuing as an entrepreneurial competence determines performance of value-system actors in Kenya's leather industry.

H_{a6}: Creating as an entrepreneurial competence determines performance of value-system actors in Kenya's leather industry.

H_{a7}: Innovation mediates the relationship between entrepreneurial drive and performance of value-system actors in Kenya's leather industry.

1.5 Justification of the Study

Entrepreneurship is crucial for social and economic development notably in exploiting physical and knowledge resources, job creation, export growth and has received increasing attention globally and in Kenya (RoK, 2007; Nafukho & Muyia, 2010; Acs *et al.*, 2015). Recent studies are aimed at understanding and developing strategies for the leather industry value-chain. These studies have bared poor performance amidst glaring potential and opportunities to improve competitiveness and earnings from a growing globalized market (Hansen *et al.*, 2015; Mwinyihija, 2015; UNIDO, 2010). The 2019 draft policy for the leather industry in Kenya proposed holistic value-chain interventions for development of Arid and Semi-arid Lands (ASAL) economies and industrialization in line with Kenya's Vision 2030 (MOALFC & KLDC, 2019). The policy is an acknowledgement of this rich resource-base potential and opportunity for market competitiveness that calls for enhanced entrepreneurial capacity across the SME-dominated value-chain.

Entrepreneurial ecosystems are hotbeds of innovations (Cohen, 2005). The need to adopt an entrepreneurial culture in raising competitiveness and therefore performance in agro-food industry from a value-chain perspective has been argued by Adhikari (2013). The link between entrepreneurial traits, behaviour and higher levels of industry, economic performance or competitiveness is indicated. According to Welter (2010), higher contextual levels of analysis (political or economic system) can show interaction with lower levels such as individual (opportunities identified by the entrepreneur) and context-specific outcomes can contribute to a better understanding of the entrepreneurship phenomena. The need to build on theory linking entrepreneurship to industry ecosystems is supported in studies showing diverse and continued scholarly interest such as those by Li, Zubielqui and O'Connor (2015), Stam (2015), Spigel (2017), Voeten (2017), and Shwetzer, Maritz and Nguyen (2019).

1.5.1 Importance to Policy Makers

Chatterji, Glaeser and Kerr (2013) assert that entrepreneurship is a powerful force for local and economic growth and is increasingly seen occurring in clusters such as Silicon Valley, in which industry linkages are important. However, Chatterji *et al.*, (2013) admit that even though advocating for policy support for entrepreneurial clusters, there is limited understanding of how these localized entrepreneurship works. They highlight the dilemma of focusing on industry- versus firm-level policies. Li *et al.* (2015) cite studies that define industry or entrepreneurial ecosystems beyond the value-chain to include interactions of multiple sectors and actors "working together to create a supportive environment" for entrepreneurship.

Establishing the relationship between individual entrepreneurship and industry-level performance may unlock new opportunities for policy, especially in factor-based economies, to reclaim their comparative advantage. It would also provide insights amongst policy makers hoping to develop entrepreneurship or industries by providing an individual-to-industry link and perspective in their application of existing knowledge. BMI, Amit and Zott (2012) not only acknowledge interdependencies of activities within a business (activity systems) but also advocate for a holistic "systemic view" that takes into account linkages between the business and networks or ecosystems of operation to avoid an isolated or silo perspective. Further, Kenya needs accurate and current data to guide policy on MSEs (KIPPRA, 2016) and this study will be a contribution to this effort. Domestic value-addition in the leather industry has been identified as an opportunity for addressing the import bill, increasing employment, reducing poverty, spurring manufacturing in line with the ‘Big Four Agenda’ and Vision 2030 (KIPPRA, 2019).

1.5.2 Importance to Entrepreneurs and Entrepreneurial Ventures

By taking individually-oriented perspective, the construct of entrepreneurial drive developed in the hypothesized model can be useful in guiding interventions for developing entrepreneurship amongst aspiring entrepreneurs, venture owners, managers and even firm staff. By isolating distinctive traits, venture owners can identify individuals with entrepreneurial propensities while hiring and also focus on the needed competencies develop. Further, the entrepreneurial drive construct is adapted to network and ecosystem contexts whose significance is increasingly acknowledged in theoretical and empirical literature. For example, Mason and Brown (2013) assert the need to take a holistic approach in entrepreneurship intervention that includes the diverse actors in the ecosystems.

1.5.3 Importance to Entrepreneurs and Leather Industry Actors

Glaeser, Kerr and Ponzetto (2009) state that small manufacturing firms in Africa need entrepreneurs in order for them to grow successfully. Entrepreneurial capabilities that lead to innovation can create or renew products, enterprises and industries, can endow economies, especially of developing countries, with the competitiveness needed in the new world order (Audretsch, 2007; Audretsch, Falck, Heblich and Lederer, 2012).

Entrepreneurial management can draw benefits of collaborative industry linkages in exploiting opportunities for value creation and enable adaptation to globalized competition. Through setting up a Leather Park, Kenya aims to increase the proportion of finished leather goods, such as shoes, belts, bags for local and export markets (RoK, 2013; Hansen *et al.*, 2015). Actors in the Leather Park can be guided to clearly identify and exploit opportunities for collaboration instead of seeing their enterprises as solely competing with others within the industry cluster. Intensifying industry activities downstream along the value-chain from raw to processed goods not only increases earnings but also creates more jobs since the leather industry is labour-intensive (UNIDO, 2010).

1.5.4 Importance to Industry and Entrepreneurship Scholars

This study would contribute further to our theoretical understanding of system-level perspective of entrepreneurship in influencing the performance of an industry. While poor performance and lack of competitiveness in export markets for manufacturing firms in Africa is acknowledged (Dinh and Clarke, 2012), the role of entrepreneurship is not sufficiently investigated. Development of an entrepreneurial drive model and the linkage with firm and industry performance would provide a framework to guide practice and further research. Such knowledge would be relevant to scholars and researchers in advancing theories of entrepreneurship and economics. Kerr, Kerr and Xu (2017) aver that there is room for training programs to go beyond the popular development of hard entrepreneurship skills to addressing softer personality mapping and development.

1.6 Scope of the Study

This research examined the relationship between entrepreneurship and performance of the leather industry value-system players in Kenya. Though livestock production as a source of raw materials is significant to the leather industry, for convenience this study focused on the leather industry as delimited in the manufacturing sector as perceived by the Government of Republic of Kenya. As crucial as it is, livestock production is classified as a separate industry in the agricultural sector where hides and skins are useful by-product (United Nations, 2008).

Mugenda (2008) posits that one can limit the scope of research based on well-defined population boundaries. This study will isolate value-system role players associated with Nairobi-based members of the Leather Articles Entrepreneurs Association (LAEA). A similar value-system is described in the Hansen *et al.*, (2015) report with reference to leather-goods manufacturers' cluster based at Kariokor Market (KM), Nairobi. Most value-addition takes place in downstream manufacturing of leather goods and requires to be enhanced for competitiveness as envisioned in Kenya's development plans (RoK, 2007). The value-addition roles to be studied along the product flow will begin tanners as primary processors (transforming raw hides and skins into semi-processed wet-blue and full processed crust leather), finished leather traders as secondary delivery agents, manufacturers of leather goods as secondary processors (producing mainly shoes, bags, belts) to retailers of these leather goods as tertiary delivery agents along the value-chain. Various industry associations and government agencies linked to this value-chain will be studied for their role in industry performance. A description of the value-system roles is provided in Table 1.2. The individual industry-actor units are referred to either as an enterprise, business or simply as a firm for uniformity.

Table 1.2: Examples of Leather Industry Value-system Roles

Value-system Role	Value-addition Activities
Primary Processing	Tanners
Secondary Delivery	Leather traders/suppliers
Secondary Processing	Leather-goods manufacturers
Tertiary Delivery	Retailers and exporters of manufactured leather products
Industry Networking Support	Industry associations
Policy and Regulatory Support	Industry policy formation, regulation and research
Research Support	Leather research and education

Researcher's own classification.

1.7 Limitations of the Study

The study faces the dilemma of balancing scope against economic-resource limitations. A country's leather industry value-chain in Kenya in its broad scope can be considered to include upstream production of livestock to consumers and the diverse factors that can influence performance outcomes at firm and industry level. The study limited its scope to downstream leather processing where most of the value-addition activities take place from tanning to leather-goods manufacturing and delivery / marketing agents in-between, plus other industry support role-players such as regulators and associations.

Given the diversity of actors studied here, the impinging environmental factors are as diverse. The environment has cultural, government / political, institutional (e.g. financial or academic), market dynamics, technological, ecological (climatic), enterprise and, not least, the principal individuals involved, their decision making and strategies. Not all influences could be studied here and an assumption had to be made to hold them constant or as extraneous variables. The focus of this study was the psychological and behavioural traits of firm leaders whose role is crucial and tied to performance of firms in the industry. Several scholars have used owners and strategic managers of small firm as principal informants in various entrepreneurship studies.

This study also had to find performance measures that are common to the industry-ecosystem, from the primary to higher level value-chain actor roles. In other words, to be relevant to the study of an industry ecosystem, value-chain actor goals and parameters have to be consistent and coherent with the industry performance measures. Such logical relationship would allow cumulative performance measures at value-chain actor level to reflect industry ecosystem level performance measures. The performance variable of industry actors in this study was therefore guided by relevance to industry goals within the leather product boundaries.

The study also had to resolve the dilemma of using historical performance and current self-reporting of entrepreneurial determinants of that performance. Though SME's keep records especially of transactional nature (KNBS, 2016), access to diverse performance data needed for this study was a challenge due to lack of or reluctance of owners and managers to share performance, especially financial, information. Self-reporting of past performance at firm level was used as a justifiable source of primary quantifiable data.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explores recent scholarly literature on theories and concepts pertinent to this study. The concepts studied here are identified with the disciplines of psychology, entrepreneurship, systems thinking, industry and economics. It encompasses theoretical work on dimensions of entrepreneurship and their linkage to innovation and performance as entrepreneurial outcomes at both firm and industry levels. The chapter therefore explains the entrepreneurial drive, innovation and performance concepts from other theoretical work and how they have been adapted as constructs in this study. Further, empirical research to support the theoretical perspectives is presented. A conceptual framework of the relationship between the variables for guiding this study is then developed. The review offers a critique on literature reviewed on entrepreneurship and entrepreneurial outcomes at industry ecosystem level. This chapter finally identifies research gaps in relevant literature.

2.2 Theoretical Review

When developing measures of a concept for research, different aspects or components of the concept are considered as dimensions. These dimensions of the concept are specified from theory and research on that concept (Bryman, 2012). Literature reviewed in this study related to concepts of entrepreneurship and its outcomes in the context of an industry ecosystem. Theories on systems, entrepreneurship, motivation and creativity are reviewed. The discussion on these theories shows the link between individuals and their firms, as actors in an entrepreneurial ecosystem, and the innovation and business performance as entrepreneurial outcomes. General systems theory lays the foundation for explaining entrepreneurial ecosystems. Psychological or personality theories are singled out as plausible explanations of entrepreneurship. Motivation and creativity theories address the gaps linking the individual's personality and entrepreneurship as conceptualized from theory.

2.2.1 General Systems Theory

A system can be defined as "a set of elements standing in interrelation among themselves and with the environment" (Bertalanffy, 1972) General systems theory has its origins in 1920's through the work of Bertalanffy (1972) initially with reference to biological systems and has developed as a model of certain aspects of reality that provides a methodological maxim and allows understanding of things "which were previously overlooked" (Bertalanffy, 1972). General systems theory is concerned with the scientific exploration of how various elements are interrelated into a superordinate "whole". General systems theory has found relevance and continues to develop in traditional scientific disciplines such as biology, chemistry and physics but also in social sciences. It finds application as in various sciences as "systems science", in problems of modern technology and society as "systems technology" and in informing world view as "systems philosophy". Mathematical expressions have been developed to describe systems as dynamic. System approaches are applicable wherever "system problems", that is problems of interrelations within a superordinate whole, are explored. Thus a system is a conceptual model of general nature that explores, describes, explains and predicts nature of elements and forces within and entity (Bertalanffy, 1972).

Mele, Pels and Polese (2010) elaborate that a systems theory is a conceptual framework for analyzing a phenomenon as a coherent whole made up of elementary parts interacting with each other and the environment. Systems have been studied in nature, science, social and economic contexts. Systems perspectives are therefore multidisciplinary from such areas as natural sciences, economics, sociology, law, cybernetics, psychology and ecology. Mele *et al.* (2010) cite early work by von Bertalanffy in development of system theories. Colapinto and Porlezza (2012) show the importance of overlapping interaction of diverse actors in creative industries of a knowledge economy. In studying interactions of entrepreneurship pillars in economies, Acs, *et al.* (2015) Global Entrepreneurial Index (GEI) studies direct understanding of entrepreneurship to a system linkages (meso-level) approach. According to Valentinov and Chatalova (2016), functionally differentiated systems (economy, politics, law) are a key attribute of civilization and modern society. Cohen (2005) discusses an infrastructure of various elements and networks can interact to form a sustainable ecosystem of entrepreneurial innovations.

Entrepreneurial ecosystems are conceptualized from biological ecosystems (Isenberg, 2010). Much of the current knowledge on has built on the work of Stam (2015) and Spigel (2017) who provided system context elements in models of successful entrepreneurial ecosystems. Entrepreneurial ecosystem actors and their roles can also be gleaned from 'components' as identified by Cohen (2005) to include universities, government, professional associations, capital providers, talented employees. For actors in an economic system to be sustained by reaching their individual and collective goals, there has to be "investment" in resolving the social dilemma of pursuing internal goals/building internal complexity while being responsive to environmental complexities which can result in collective self-damage (taken as sub-optimization, win-loose or loose-loose situations). This means institutional mechanisms to make systems responsive to the environment. Such investment requires deliberate efforts for learning and coordination though information flows, conflict resolution strategies, policy controls / compliance mechanisms, supportive infrastructure and flexibility of governance structures (Valentinov and Chatalova, 2016).

Drawing from the work of Oliver Williamson and Thorstein Veblen, Valentinov and Chatalova, (2016) show that systemic imperatives are found in institutions such as economic industries where functionally-differentiated economic agents or actors are mutually interdependent. Valentinov and Chatalova (2016) observe that social dilemma situations arise when economic actors as competitors, critically depend on each other but fail to take full account of their mutual dependence. While cautioning against a 'one-size-fits-all' scenario for an emergent field of inquiry, Shwetzer *et al.* (2019) provide a holistic model that acknowledges the heterogeneity and dynamism of entrepreneurial ecosystems. While asserting the importance, a study of Ghanaian, Kenyan and Tanzanian SMEs in manufacturing decried lack of interactions between diverse institutions as actors in an innovation system, such manufacturing SMEs, technology institutions and universities, in promoting innovation through knowledge links (Voeten, 2017).

Therefore a systems perspective, such as approaching entrepreneurship in an industry ecosystem, is necessary to incentivize pursuit of collective goals by rational actors for mutual benefit results as opposed to collective self-damage. This study identifies functional differentiation of economic actors in industries using their industry-system roles as adapted from Porter's 1985 value-system (Priem, Butler and Li, 2013). Thus, the global economy is the environment, industries are the context of system analysis and firms / business enterprises in various value-chain roles are the system actors (in this case the economic agents).

Entrepreneurial ecosystems are thus defined as the network of diverse and inter-linked actors or institutions in an industry that are exchanging products, knowledge or other resources used in development of innovative value for mutual sustainable advancement. This definition adapts work from general systems theory, entrepreneurship and industry economics. It is the network of (usually localized) industry actors that interact to collaboratively pursue industry competitiveness goals (Mele, Pels and Polese, 2010; Colapinto and Porlezza, 2012; Li et al., 2015; Cohen, 2015; Valentinov & Chatalova, 2016).

Beyond the proximal firm, industry and economic region benefits, a systems approach contributes to sustainability goals embodied in the United Nations Sustainable Development Goals (SDG) that are humanity's attempt to balance social, economic and ecological needs for posterity. An industry ecosystem approach provides opportunities to address SDG number eight (Decent Work and Economic Growth), number nine (Industry, Innovation and Infrastructure) and number eleven (Sustainable Cities and Communities) directly and the other 14 goals indirectly (UNDP, 2022). To illustrate the networking and knowledge-sharing needs of systems-oriented sustainable development, Business and Industry, Non-governmental Organizations, and Scientific and Technological Community are identified as major stakeholders of nine social sectors involved in UN SDG mainstreaming (UNDESA, 2021). The importance context and involvement of multiple actors in creation of a goal-bound system is also seen in the adoption of World Economic Forum (WEF) entrepreneurial ecosystems for developing youth entrepreneurship as a plank in attainment of UN SDGs (a spectrum of SDGs 1, 5, 8 and 10). The contextual entrepreneurial ecosystem actors and social-economic components identified here include accessible markets, the youth (as part of the labour market), funding, mentorship and advisory support, regulatory framework and infrastructure, education and training, universities as catalysts, and cultural support (UNDESA, 2020). Therefore, coupled with actor 'entrepreneurial drive', such systems-oriented approaches to addressing planetary and sectoral goals also provides practical initiatives for application of an entrepreneurial ecosystem model to development within given boundaries. Such practical solutions include identification and linkage/networking of stakeholders, creation of knowledge sharing fora such as capacity building conferences and websites, or incubation and acceleration of start-ups. Entrepreneurial ecosystems are also a perfect interpretation of Peter Senge's seminal theory and practice of Systems Thinking (Senge, 1997) at industry level.

The use of diverse and system-relevant performance-indicators / variables for the industry studied here is an attempt at addressing individual actor-opportunistic behaviour noted by Valentinov and Chatalova (2016) in strong incentives / over-specification of system goals. Pursuit of individual incentives that are relevant to collective system sustainability, or in other words alignment of actor goals with those of the system (coordinated governance rather than weakening of individual actor) incentives by Valentinov and Chatalova (2016)), should be the strategy or imperative for exploiting industry ecosystem-focused entrepreneurship for global competitive advantages. The need for alignment of (knowledge) industry goals amongst collaborating (business and non-business) players in an ecosystem (innovation ecosystem) for achieving business growth and renewal has been observed in the knowledge industry by Pellikka and Ali-Vehmas (2016). An ecosystem perspective where there is collaborative exchange of knowledge between commercial and non-commercial participants is therefore critical for firm and industry performance.

2.2.2 Theoretical Perspectives on Entrepreneurship

The entrepreneurship phenomenon has lacked a comprehensive theoretical explanation. Instead, explanation for the entrepreneurship phenomenon has been founded on several theoretical perspectives that underscore the field's multidisciplinary nature. Economic, sociological and especially psychological theoretical perspectives have received much scholarly attention. Others are the anthropological, opportunity-based and resource-based entrepreneurship theories. Each theoretical approach has had its explanatory and application limitations (Simpeh, 2011). Kobia and Sikalieh (2010) observed the lack of a common definition of entrepreneurship yet it attracts scholarly attention in branches of various disciplines such as economics, sociology, finance, history, psychology and anthropology. They stated that none of the three perspectives that have attempted to elucidate our knowledge of the entrepreneurship, namely the trait, behavioural and opportunity recognition approaches, is sufficiently comprehensive. Instead of finding the combination of these perspectives in the individual entrepreneur, Kobia and Sikalieh (2010) relied on the time dimension by viewing entrepreneurship as a process. Their discussion on trait approaches actually comes closest to reconciling the perspectives by acknowledging psychological tendencies and behavioural aspects of the entrepreneurial personality. According to Kerr *et al.* (2018), psychological or personality traits theoretical perspective has unified economics, psychology, sociology, and business management approaches

Entrepreneurship can be looked at from three dimensions; the individual or the entrepreneur, the firm and the environment in which the firm operates (Lumpkin and Dess, 2001; Rauch and Frese, 2007; Krueger, Reilly and Carsurud, 2000; Zhao, Seibert and Lumpkin, 2010). The interplay of these three facets determine to a large extent, the success of any entrepreneurial undertaking (Krueger *et al.*, 2000). Carlsson, Braunerhjelm, McKelvey, Olofsson, Persson and Ylinenpaa (2013) assert that entrepreneurship research is multi-dimensional with individual, team, venture, firm and macroeconomic levels of analysis. Further presence of social, economic, geographic and industry clusters may influence entrepreneurship at all levels. Due to its fragmented perspectives (not to mention philosophical underpinnings separating explorative from exploitative entrepreneurship) arising from relevance to diverse disciplines, various authors have noted that entrepreneurship lacks a common comprehensive theoretical framework and research paradigm (Carlsson *et al.*, 2013).

Considered from a psychological perspective of entrepreneurship, personality traits are explained as the natural qualities or potentials an individual has that make them an entrepreneur. In their review of literature on personality traits of entrepreneurs, Kerr, Kerr and Xu (2018) assert the link between traits (need for achievement, locus of control, self-efficacy/proactivity, innovativeness, need for autonomy, risk-taking, and goals and aspirations) and entrepreneurial behaviours (entry and exit) and outcomes (firm performance). Kerr *et al.* (2018) saw the link between firm performance and entrepreneurial personality as understudied and ripe for research.

Despite the lack of a common understanding of entrepreneurship, scholars acknowledge its inextricable link to individuals and their careers, on economic use of resources and creation of value, on performance of business organizations and economies, on realization of vision and change, and also therefore, on the importance of entrepreneurship education. The significance of entrepreneurship therefore to be found in its impact on social and economic welfare of individuals, institutions and countries (Acs *et al.*, 2015; Rauch & Frese, 2007; Bjerk, 2007; Kobia & Sikalieh, 2010).

Rwigema and Venter (2004) define entrepreneurship as “the process of conceptualizing, organizing, launching, and – through innovation – nurturing a business opportunity into a potentially high growth venture in complex, unstable environment”. According to Timmons and Spinelli (2007), entrepreneurship is a way of thinking, reasoning, and acting which opportunity obsessed, holistic in approach, and shows leadership balance and purpose. According to Hisrich, Peters and Shepherd (2009), entrepreneurship is a dynamic process of creating incremental wealth. Individuals who assume the major risks in terms of equity, time and/or career commitment to provide value for some product or service create the wealth. The entrepreneur is therefore a person who creates new user value (Bjerke, 2007). An entrepreneur is one who creates (Bwisa & Ndolo, 2011) and is indispensable to the understanding of entrepreneurial phenomenon. Cassia *et al.,* (2006) assert that "from a market, organizational or whole industry viewpoint, the entrepreneurial phenomenon is always strictly related to individual action, that of the entrepreneur". Thus, entrepreneurship is associated with an individual and has given wealth outcomes. Kuratko (2014) argues that entrepreneurship "is a dynamic process of vision, change and creation that requires application of energy and passion toward the creation and implementation of new ideas and creative solutions". The entrepreneur then is the one who recognizes and seizes opportunities to converts creative ideas into value-added solutions through effort and risk-taking in a competitive market place.

Given the centrality of entrepreneurship in dynamism of social and economic development and the lack of a comprehensive theoretical framework, this research would contribute to our understanding and delineation of entrepreneurship as a discipline. Carlsson *et al.* (2013) observe that there is need for research into interactions between entrepreneurship (entrepreneurs and their entrepreneurial activities) and other actors, institutions, norms, laws, innovation systems and industrial clusters in yielding fruitful social welfare outcomes. An attempt is made here to develop a comprehensive definition of entrepreneurship from a psychological perspective by adapting contributions from various scholars (Bjerke, 2007; Hisrich, Peters & Shepherd, 2009; Carlsson, *et al.*, 2013). Entrepreneurship is thus defined as the process of identifying business opportunities, bringing resources together, taking the risk and pursuing the identified opportunities and successfully initiate, growth-oriented business ventures, new or within an existing organization, to create value/benefits for personal or social welfare.

2.2.3 Motivation Theory

Motivation is seen by various scholars as a state linked to the physiological and psychological, variously described as a drive, impulse, wanting and desire (Wright, 2016; Reeve, 2016). Wright (2016) discusses motives as reasons to act, guiding behaviour in its active form, or having potential to do so in latent form, that lead individuals to put effort in meet their desired goals. Motivation is a psychological force that enables action that cannot be observed directly and is often studied in relation to pursuit of goals. Motivation is therefore measured indirectly using observable, self-reported responses of cognitive (e.g. recall and perception), affective (e.g. subjective experience) and behavioiural (e.g. performance) and physiological (e.g. brain activation) nature (Toure-Tillery & Fishbach, 2014). Motivation is understood in several mini-theories such as intrinsic motivation and yet to be coalesced into one grand theory (Reeve, 2016).

According to Reeve (2016) the classic definition of motivation but one that is inferential of indicators is "any internal processes that energizes, directs and sustains behaviour". An alternative definition of motivation that is more revealing of the essence is adapted by Reeve (2016) and adopted by this study is "seeking change", where that change can be not only in behaviour but also cognitions, self-concept, emotions, affect, the surrounding environment, quality of ones relationships, agency (engagement), social interactions and even culture. According to Reeve (2016) motivation is primary to emotion. Stephan *et al.* (2015) state that entrepreneurial motivation is "the entrepreneur's willingness to achieve certain goals that are important to him/her" within a personal and market context. Goal-setting and self-determination theories whose, origins lie in industrial psychology, state that specific and high, autonomously set goals motivate people in organizations to be more productive and leads to higher levels of performance (Deci & Ryan, 2000; Locke & Latham, 2006; Baum, Locke & Smith, 2017). Motives (active or latent/quiescent) vary in strength and guide behaviour when converted into effortful goal pursuit in their active form (Wright, 2016).

Early references of “drive” as a motivational construct are attributed to independent work by Watson and Morgan in 1917 and by Woodsworth in 1918 (Remley, 1980). Drive was seen as the activating and energizing force that result in behaviour. While “drive” initially became central to psychology of motivation through Clark Hull’s drive theory after his 1943 book but eventually failed (Reeve, 2016), it is not uncommon for the term to be used in reference to motivation. Baumister as referred to in Wright (2016) equates motivation to drive (stable trait-form) and impulse (immediate state-form). Stephan *et al.* (2015) entrepreneurial motivation can be classified into typologies and has individual (such as necessity-driven/push job loss or opportunity-driven/pull growth and wealth goals / ambitions) and contextual (such as age, gender, race, culture, economy or government) influences. These individual “motivations” are implicitly in line with the adopted definition of motivation as sought changes but lack coherence with psychological theory when they attribute motivation to individual traits, such as race, or contextual issues such as resource-access or economy or institutional intervention. While admitting to opportunity/pull versus necessity/push differentiation as an oversimplification of the subject, Stephan *et al.* (2015), nonetheless conclude that entrepreneurial motivation is goal-related, multidimensional and linked to firm performance and growth.

2.2.4 Creativity Theory

Creativity is production of novel ideas, items or outcomes from combining diverse and often unrelated inputs (information, ideas, objects) for given appropriate purposes (Bergquist, nd.; Amabile, 2012; Kanematsu & Barry, 2016). There are no single theories to explain creativity nor the related concept of innovation. Instead, existing ones are based on diverse approaches such as psychoanalytic, behaviourism and humanistic models in psychology; developmental, evolutionary and economic in other social sciences (Bergquist, nd.; Kanematsu & Barry, 2016).

These theories have the common thread that creativity has four dimensions: the creative person, the creative product, the creative process and the environment in which creativity takes place but largely fail to agree on the source or process of creativity (Bergquist, nd.; Amabile, 2012); Kanematsu & Barry, 2016). The componential theory of creativity is propounded as a comprehensive model for guiding the process of creative work in an individual linking it to personal motivation, competencies and organizational innovation (Amabile, 2012). Jon-Arild (2013) weaved systems thinking, action theory and motivation theory to explain innovation processes in organizations. Innovation is defined as "the application of new ideas with the aim of creating value" and therefore implicitly linked to the outcomes of creativity. Jon-Arild (2013) not only extends the typologies of innovation to seven (three institutional: political, cultural, social, and four economic: organizational, material, service and market innovations) but also asserts the importance of economic and other systems in providing linkages for success. Keeley, Walters, Pikkel and Quinn (2013) provides ten types of innovation. Most entrepreneurship studies however do not take the perspective of creating as a behaviour or ability that is linked to new outcomes. While identifying creativity as a process that involves recombination of existing resources into new ideas, a recent study by Shi, Yuan, Bell and Wang (2019) confirms the four key dimensions used to study creativity as process, person, product and place. Shi *et al.* (2019) nonetheless assert the crucial role of individual creativity in entrepreneurship or starting innovative businesses.

2.2.5 Entrepreneurial Drive

Literature shows that entrepreneurial drive as an acknowledged but little studied concept in psychological-theories approach to entrepreneurship. Drive is seen psychological inclinations and their behavioural manifestations that leads to given results. Taken in the context of entrepreneurship, drive is a psychological impulse that makes entrepreneurship take shape. It is identified with well-studied constructs of entrepreneurial orientation and entrepreneurial competence that are associated with individuals. Drawing from various scholars (Bjerke, 2007; Kuratko, 2014), the entrepreneur is defined as an individual who possesses change-oriented explorative and exploitative traits, and applies them in a dynamic process to create new user value by commercial introduction of an innovation.

Carland, Carland and Ensley (2002) described entrepreneurial drive as a construct – that can explain differences in the entrepreneurial behaviour of individuals. Baum *et al.* (2017) found that psychological traits of an entrepreneur are an important though indirect predictor of growth as a venture performance measure. Scholars observed that entrepreneurial competencies comprise both innate and acquired components (Mitchelmore and Rowley, 2010) or personality and skills (Barazandeh, Parvizian, Alizadeh and Khosravi, 2015). Both Baum *et al.* (2017) and Mitchelmore *et al.* (2010) recommended further contextualized studies on entrepreneur competencies as a highly significant and direct determinant of value creation, strategy and venture growth. Most researchers assert that the entrepreneurial competence attribute requires further empirical study for clarification. Further, Zhao *et al.* (2010) personality plays a role not only in entrepreneurial intention but also post-launch performance. Citing Lumpkin and Dess studies in 1996, Zhao *et al.*M (2010) argue the importance of further studies to establish how entrepreneurs' personality traits and behaviours interact and ultimately relate with firm success. Carland *et al.*, (2002) defined entrepreneurial drive as "… the drive to create and grow a venture". As a construct, Carland's entrepreneurial drive had five dimensions: cognition, preference for innovation, risk-taking propensity, self-efficacy, and entrepreneurial vision (Ensley *et al.*, 2000; Armstrong & Hird, 2009).

Doyle, Fisher and Young (2002) used the Carland Entrepreneurial Index (CEI) as a measure of entrepreneurial drive. Armstrong and Hird (2009) applied the CEI in measuring this drive for its validity and reliability. However, as a measure of 'drive', CEI leans heavily on psychological or motivation dimensions that are often studied as entrepreneurial orientation. CEI has little on competence – the practical expression of these traits –except for the other psychological dimension of self-efficacy. Entrepreneurship scholars have referred to entrepreneurial drive in terms of disposition and behaviour. Florin, Karri and Rossiter (2007) explain the origin and their conceptualization of an entrepreneurial drive construct as "attitudes" regarding desirability for and feasibility of entrepreneurship. The construct described attitudes leading to entrepreneurship that can be seen as variables associated with learned psychological inclinations or attitudes (with cognitive, affective and behavioural dimensions similar to motivation) that can be fostered through education to promote entrepreneurship. Florin *et al.* (2007) proposed five dimensions scale of entrepreneurial drive comprised Self-efficacy (SE), non-conformity (NCR), preference for innovation (PI), achievement motivation (MA) and proactive disposition (PRD) and used in several studies. Wasdani and Mathew (2014) discusses entrepreneur motivation as drives in the model of McClelland's 1965 achievement motivation trait.

There exists a scholarly confusion about the dimensions of the much-studied entrepreneurial orientation, as there is about its cognitive versus behavioural foundations as well as its attribution to individuals versus firms. However, its determination of firm performance is agreed upon. Wiklund *et al.* (2003), and Rauch, Wiklund, Lumpkin and

Frese (2009) argue that innovativeness, risk-taking and pro-activeness are the three critical dimensions of entrepreneurial orientation which determine firm performance. Zhang Zhang, Cai, Li, Huang, and Xu (2014) citing Covin and Lumpkin, observe that scholars have not agreed whether entrepreneurial orientation should be studied as a behavioural or dispositional construct nor whether as a first-order or second-order latent construct. Lomberg, Urbig, Stockmann, Marino and Dickson (2017) observed that entrepreneurial orientation is studied as both a uni-dimensional and multidimensional variable with empirically supported positive effects on firm performance. Even Lomberg *et al*. (2017) assert that entrepreneurial orientation is a strategy making process influencing decisions and actions. Having a futuristic imagery is central to strategy theory (Hamel & Prahalad, 1996). Yet the role of vision as a latent entrepreneurial orientation variable is not acknowledged.

From an empirical study and support with historical entrepreneurship scholarship, Zhang *et al.* (2014) conclude that entrepreneurial orientation can be studied as a five-dimensional behavioural construct. They do so having embraced a behavioural perspective. However, from psychology studies (PT, 2015), an orientation is a mental disposition rather than a behaviour. Further, the questions used to validate the model by Zhang *et al.* (2014) are suggestive of both dispositions and behaviours. Further, often units of observation are individuals but other study aspects (the observations themselves, variables and outcomes) are attributed to firm-level. The CEI is useful in affirming the entrepreneurial orientation as a dimension of the entrepreneurial-drive construct. In this study, cognitive dimensions of entrepreneurial drive are further grouped as entrepreneurial orientations.

Baron and Tang (2009), assert that entrepreneurial competencies, such as social skills, can be learned and are related to the entrepreneurs' success. While noting the lack of a clear definition of entrepreneurial competencies in scholarly work (to guide research, development or practice), Mitchelmore and Rowley (2010) offer a list that does not separate psychological inclinations from practical skills or behaviours. Barazandeh *et al.* (2015) empirically found that entrepreneurial competencies are not personality traits but acquisitive skills. Lans *et al.* (2011) identified analyzing, pursuing and networking as entrepreneurial competencies in small agro-based firms that can be learnt and developed. This study adapts these 'competencies' from Lans *et al.* (2011) three-factor criteria, which it agrees with, as a basis for defining entrepreneurial competence. Lans *et al.* (2011) analyzing factor is considered as part of a creative process, and creating as an important aspect of innovation (and therefore of entrepreneurship). Pro-activity or initiative are seen as expressed in the competence dimension of pursuing. Further, creativity qualifies as a competence in that it can be learnt. Therefore, this study selects creativity, as opposed to analysis, as one of three factors of entrepreneurial competence to be studied.

Given the mix-up over how entrepreneurial characteristics should be understood, it is important to study both psychological dispositions and behavioural competencies which are hereby considered as sub-variables of entrepreneurial drive. This research expands the entrepreneurial-drive construct by not only using the orientation dimensions but also adding three empirically studied competence dimensions from Lans *et al.* (2011). The entrepreneurial drive construct adapted for this study has empirically established three entrepreneurial orientation dimensions (vision for growth, opportunity recognition, and calculated risk-taking) and three competence dimensions (networking, pursuing and creating). However, this study proposes to use the characteristics re-stated to reflect their role in contributing to industry system-level goals of competitiveness. The individual entrepreneurial characteristics (psychological dispositions and behavioural competencies) that have been adapted to constitute the dimensions of the entrepreneurial drive construct (Ensley, Carland & Carland, 2000; Armstrong & Hird, 2009; Boag, 2014; Taylor, 2019) are shown in Tables 2.1 and 2.2.

Table 2.1: Summary Showing Development of the Cognitive Dimension of Entrepreneurial Drive Variable.

Traditional Individual Characteristic (Rauch *et al.* (2009)	Other Studies	CEI (Carland *et al.*, 2002)	Adaptation as an Industry-relevant Entrepreneurial Drive Characteristic
Entrepreneurial Orientation			
		Entrepreneurial vision / Strategic intent	Vision for growth: future-oriented improvement goals that are system-relevant but sometimes pursued independently – e.g. improving financial performance, product quality, quantity, production efficiency, or value addition.
	Opportunity recognition (Santos *et al.*, 2015; Baron, 2006)	Cognition	Opportunity recognition: Recognition of strategically significant opportunities (alert to diverse changes) for change and value addition (using strategic management theory of analyzing business environments) Perceiving favourable chances for introduction of innovations in processes, product, markets or eco-systems.
Risk taking propensity		Risk taking propensity	Calculated risk taking: propensity to consolidate and direct resources from the system to focus on achieving goal (e.g. knowledge, productivity) whose actual result is unknown but whose cost versus benefits options are considered.

Table 2.2: Summary Showing Development of the Behavioural Dimension of Entrepreneurial Drive Variable.

Traditional Individual Characteristic (Rauch *et al.* (2009)	Equivalent Characteristic as proposed by Lans *et al.* (2011)	Adaptation as an Industry-Relevant Entrepreneurial Drive Characteristic
Entrepreneurial Competence		
Self-efficacy	Networking	Networking: Identifying sources and gathering industry-relevant knowledge for use in value addition.
Initiative / Pro-activity / Self-efficacy	Pursuing	Pursuing: searching and taking innovation action to take advantage of opportunities especially ahead of competition.
Innovativeness	Analyzing	Creating: analyzing and synthesizing seemingly unrelated concepts of a situation to understand relationships, infer implications of components and develop novel combinations that can be applied.

Entrepreneurial drive is thus defined as the propensity to act and competence to actualize entrepreneurship. It is the combination of individual orientation and competence characteristics that are expressed in entrepreneurship. The conceptualization of entrepreneurial drive and its relationship with entrepreneurship outcomes offers a novel understanding of the phenomenon from a psychological perspective (including motivation and creativity) and a chance for reconciling this with business management and economic theories using innovation and growth.

2.3 Conceptual Framework

A conceptual framework is a concise description accompanied by a visual depiction of the major concepts of a study, the hypothesized relationship and linkages among them (Mugenda & Mugenda, 2003). The following conceptual framework depicts the relationship between entrepreneurial drive and performance in an industry. The conceptual framework so developed takes into consideration the need for indicator attributes of various variables to be uni-dimensional, exhaustive and mutually exclusive for measurement (Neuman, 2009) as gleaned from existing literature.

The independent variable is entrepreneurial drive (ED) a construct whose elements are three entrepreneurial orientation (EO) variables (vision for growth, opportunity recognition, calculated risk-taking) and three entrepreneurial competence (EC) variables (pursuing, networking and creating). Industry performance (P) is the dependent variable which can be studied at enterprise or industry level. Innovation (I) acts as a mediating variable that determines performance. All these are aimed at the eventual outcome of industry competitiveness and leads to its survival in a dynamic, turbulent and globalized environment. The conceptual framework for this study is illustrated in Figure 2.1.

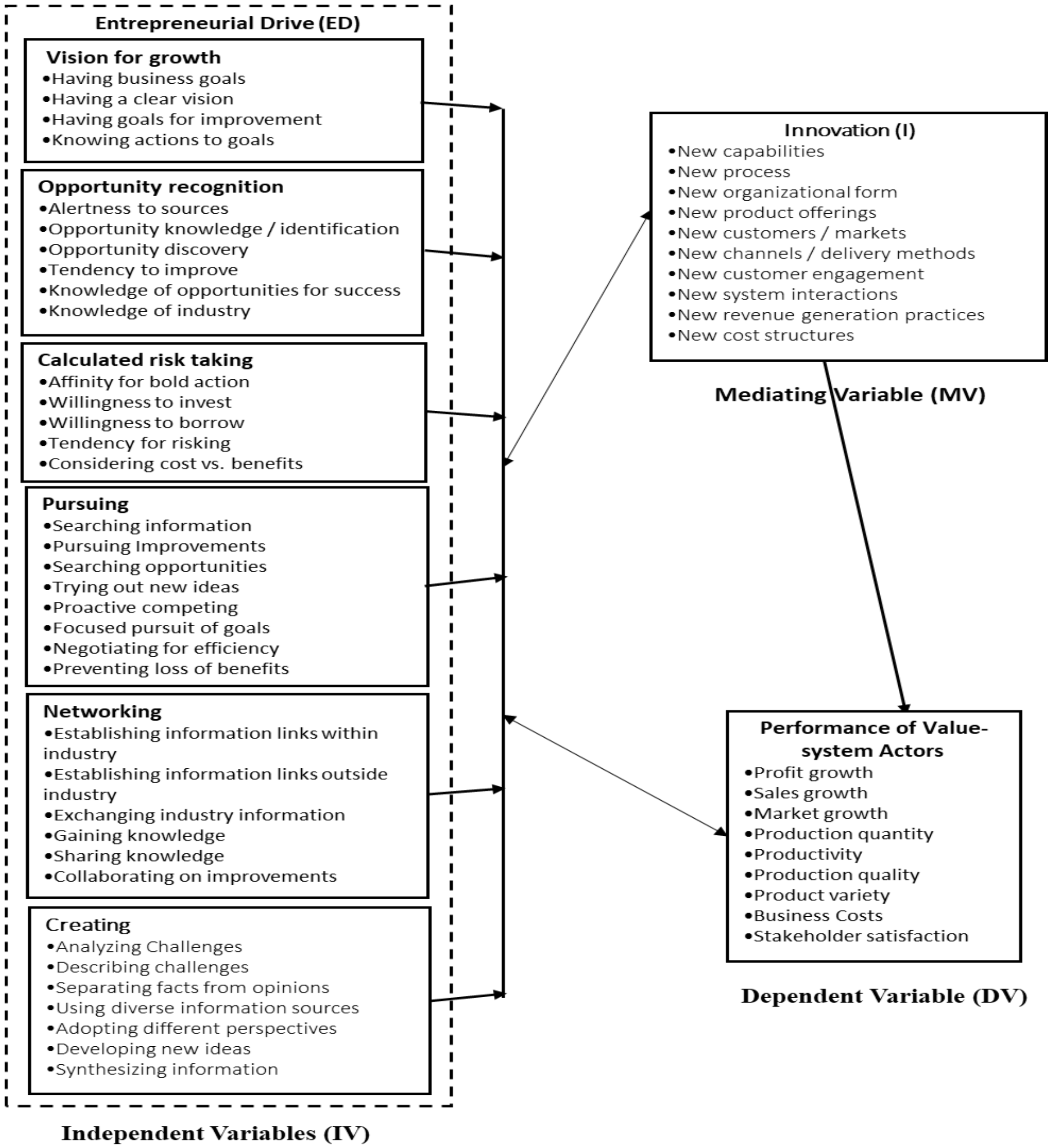


Figure 2.1 Conceptual Framework

2.3.1 Vision for Growth

There are few theoretical and empirical studies on role of vision in entrepreneurship, and even fewer in the African context or from an ecosystem perspective. Leadership and strategy scholars have articulated the determinant and positive impact of a leader's vision in business (Kantabutra, 2020). This is seen in transformational leadership theory (Chai, Hwang & Joo, 2017), and the enduring strategy perspectives on the role of goal formulation (Leiblein & Reuer, 2019; George, Walker & Monster, 2019) and vision (Kantaburta, 2020). In addition, theories in psychology such as goal-setting (Lock & Latham, 2006; Baum, Locke & Smith, 2017) and self-determination (Deci & Ryan, 1985) emphasize the link between an leader or entrepreneur's intentions (cognitions) and actions (behavior) that lead to venture success (performance) (Gagne, 2018).

A firm's entrepreneurial orientation is an extension of the individual entrepreneur's inherent characteristics that include values and intentions (Altinay & Wang, 2011). In studying communication of strategic vision, Mayfield, Mayfield and Sharbrough (2014) refer to abundant scholarly work on significance of a well-articulated strategic vision or organizational purpose, as held and disseminated by the leader, in determining organizational performance outcomes. Entrepreneurial intentions predict strategic decisions and planned behaviour to start or grow a business (Kruegeur, Reilly & Carsrud, 2000). Vision is an important aspect of Kuratko's (2014) definition of entrepreneurship as a dynamic process of change and creation. A well-constructed vision statement is seen as having a concise target (prime goal), a future perspective of the organization and its environment. This provides, among other qualities, clarity and inspiring motivation that is associated with higher performance outcomes (Kantabutra & Avery, 2010). Kantabutra and Avery (2010) report the work of Robert Baum and colleagues (in Baum, Locke and Kirkpatrick, 1998) showing a direct relationship between vision characteristics and content with growth of entrepreneurial firms (as measured by sales, profits, employment, and net worth).

The presence of a founder's vision and an entrepreneurial orientation were important characteristics associated with Spanish firms' strategic capabilities and financial performance (Aragon-Correa, Hurtado-Torres, Sharma & García-Morales, 2008). The Carlarnd Entrepreneurial Index (CEI), (Carland *et al.*, 2002) which was applied by Armstrong and Hird (2009), Asheghi-Oskooee (2015) and Narsa, Narsa and Narsa (2019), had having written objectives and plans, thinking and planning, and interest in business growth as indicators for personality traits. Balazs (2002) observed that leadership architectural role (including generating a vision setting goals, developing strategy) plays an important role in success of outstanding French restaurants that were built by entrepreneurial chefs. Lans *et al.* (2011) discuss the significance of vision as a strategic competence needed of entrepreneurs.

Despite dearth of recent direct studies on vision in terms of an individual's business growth orientation, there has been recent studies that show the importance of vision as a cognitive trait of entrepreneurs and its relationship with venture performance. Recognition of an entrepreneur's disposition to focus on goals in transforming them to action can be gleaned in scholarly literature. Reasoned intention to perform future behavior, or having a vision of goals, is seen as an antecedent of volition towards entrepreneurial action (setting and pursuing entrepreneurship intentions) (Ilouga, Hikkerova & Sahut, 2016). A scholarly review by Zainol, Daud, Abubakar, Shaari and Halim (2018) concluded that a clear vision of the future as an element of entrepreneurial leadership was a significant determinant of performance measures in SMEs.

The vision for growth construct used in this study was developed by the researcher from theoretical entrepreneurship literature on vision discussed above. This study adopted the definition of vision for growth as future-oriented improvement goals aimed at developmental changes in the value-creation activities. Growth goals in a firm are typically measured by changes in performance indicators such as profitability, production quantities, production quality, productivity or efficiency, market share or other competitiveness measures (Ensley *et al.*, 2000; Armstrong & Hird, 2009; Rauch *et al.*, 2009).

2.3.2 Opportunity Recognition

In studies of the entrepreneurial dispositions, opportunity recognition features as a prominent dimension. Baron (2006) describe opportunity recognition as a cognitive process (or processes) through which entrepreneurs identify or perceive unexploited means of generating economic value. Santos, Ceatano, Baron and Curral (2015) assert that business opportunity recognition is a crucial cognitive process without which there may not be entrepreneurship since it leads to the decision to exploit the same in an entrepreneurial venture. Despite their objective existence, entrepreneurial opportunities are not discovered by everyone because they require access to asymmetric information and the cognitive appreciation of its commercial value (Shane, 2000).

Hubert as reported by Wasdani and Mathew (2014) defined opportunity recognition as the ability to perceive “the chance to meet an unsatisfied need that is potentially profitable”. Shane (2000) states that entrepreneurial opportunities are objective phenomena while their discovery or recognition is a subjective process. Puhakka (2002) describes cognitive and behavioural dimensions of opportunity recognition as rational, intuitive process of searching and interpreting information to identify market gaps for which new value in form of strategic business solutions are created. Acs *et al.* (2015) identify opportunity perception as an attitude (and therefore psychological) pillar of entrepreneurship. Guo, Tang, Su and Katz (2016) definition of opportunity recognition can be paraphrased as an individual's efforts in searching and identifying ideas with potential to be developed into a business form. Kuckertz, Kollmann, Krell, and Stöckmann (2017) differentiated opportunity recognition from opportunity exploitation as two central concepts in the entrepreneurial process. Kuckertz *et al.* (2017) defined opportunity recognition as being alert to potential business involving searching and gathering of information on new product ideas, thus affirming the perceiving and searching elements. Puhakka (2002) found that growth of young ventures is strongly dependent on proactive behaviours of entrepreneurs in opportunity recognition phase. Research by Guo *et al.* (2016) affirms that opportunity recognition leads to higher performance once translated into action though business model innovation.

Guo *et al.* (2016) assert that opportunity recognition is a key contributor to survival, competitive advantage and superior performance of SMEs. Further, proactive search for opportunities is a necessity for SMEs but they require exploitative actions in the form of business model innovation for appropriation of value to be realized (Guo *et al.*, 2016). Drucker (1985) identified sources of opportunities that can be exploited for business including changes in industry and markets, technology, demographic trends, consumer perceptions, government policies and regulations, process needs, unexpected developments, and new developments in knowledge. A similar depiction of objective external world (of seemingly unrelated) changes, trends and events was brought out by Baron (2006) in researching how entrepreneurs recognize business opportunities. An entrepreneurial industry actor would be expected to perceive the usefulness of such changes in satisfying unmet needs for the actor or for collective benefit. This study adopted the definition of opportunity recognition as perceiving favourable chances for introduction of changes in processes, product, markets or systems.

2.3.3 Calculated Risk-taking

Entrepreneurial risk taking involves organizing and investing resources for uncertain returns (Jain, 2011). Rauch *et al.* (2009) define it as committing significant resources to ventures in uncertain environments. As a personality trait of entrepreneurs, it is a propensity or an inclination to engage in risky activity. This personality perspective is affirmed by Kerr *et al.* (2017) review that discusses risk attitudes showing correlation with entrepreneurial entry behavior and growth. Kerr *et al.* (2017) also highlight the measures used for risk attitude, including risk-taking, and the fine distinction between risk and uncertainty. From an industry perspective, actors in the chain need to demonstrate having taken actions that mobilize resources for uncertain future gain. Zhao, Seibert and Lumpkin (2010) meta-analytic studies assert that risk-taking propensity has shown contradictory empirical evidence in relationship with firm performance and requires further research. Although risk-taking propensity has shown no empirically significant effect on firm performance, it may be a significant disposition related to entrepreneurial stages involving searching and recognizing new business opportunities (Zhao *et al.*, 2010).

Acs *et al.* (2015) recognize risk acceptance as one of the personal traits which form pillars of entrepreneurship while the converse, fear of failure and aversion to risk, as obstacles that retard entrepreneurship. Risk-taking is a distinct dimension of entrepreneurial orientation and positively associated with pro-activeness and innovation in Swedish family SME's (Naldi, Nordqvist, Sjoberg & Wiklund, 2007). Although some studies suggest that while risk-taking is important as a dimension of entrepreneurship in general it is negatively associated with performance, other studies are contradictory and assert that it is dependent on contextual issues (Rauch *et al.*, 2009; Naldi *et al.*, 2007; Lechner and Gudmundsson, 2014). This may be because risk taking it is positively associated with innovation and entrepreneurial initiatives, which in turn determine performance, making it an area for further research (Baum *et al.* 2017; Naldi *et al.*, 2007).

This study addresses the ambivalent relationship between risk-taking and performance by going beyond the simple use of financial (especially profitability) performance measures to include other quantitative and qualitative measures such as production quality, quantity, sales and market growth, productivity, and stakeholder satisfaction. For this study, calculated risk-taking as a propensity is defined as propensity for business venturing that has elements of considered commitment significant resources such as physical, financial, labour or knowledge, for uncertain outcomes or in uncertain environments. Risk taking was measured as unit leaders' propensity to undertake risky projects and corresponding preference for bold versus conservative decisions in areas related to firm performance such as: improving / growth in sales, markets, profitability, products and production, productivity, quality, processing, delivery, or knowledge.

2.3.4 Networking

Strong open social networks are an important part of building systemic entrepreneurship for economic development (Sautet, 2011). Lans *et al.* (2011) describes networking as a social competence associated with being responsive, persuasive, ability to adjust to others, cooperate and receive feedback. The importance of knowledge transfer as the link between entrepreneurial actors is suggested by Spilling (1996). For an industry ecosystem to be adaptive, interactions have to exchange knowledge which the (entrepreneurial) industry-actor can use to create innovations needed for the industry to shift in its ability to compete. Shane (2000) asserts that access to otherwise asymmetrical information (e.g. about user need, production or resource) through 'information corridors' in society is a crux for entrepreneurial opportunities to be recognized.

Acs *et al.* (2015) recognize networking as one of the pillars of entrepreneurship. Cohen (2005) asserts that informal and especially formal social networks (with university research, government, professional support services, capital sources, larger corporate and a pool of talents, technology parks in an entrepreneurial ecosystem) are important to development of successful and sustainable entrepreneurial ventures for technological firms in Victoria, British Columbia. Dinh and Clarke (2012) note that compared to China, low performance of African manufacturing firms is not low innovation but advantages of information about innovations. Dinh and Clarke (2012) state that social networks, which this study considers an important dimension of entrepreneurship, could have a role in business performance of firms and therefore should be studied further for new insights. Li *et al.*, (2015) studied firms from 65 Australian wine industry clusters and found that their entrepreneurial networking capacity (within and outside the cluster) directly influenced individual firm performance in the market. They assert that entrepreneurial networking capacity is facilitated by government and institutional support and it determines competitive advantage of industrial clusters in a globalized economic order.

Li *et al.*, (2015) recommend managerial (strategic orientation to networking) and policy (government and institutional support) action to promote firm entrepreneurial networking capacity. They further suggest that government (policies and programs for development) and institutional support (consulting, capital, trade and professional associations, research and technical centers) support for entrepreneurial networking capacity of wine industry clusters enhances resource flow (including knowledge) and is necessary for firm market performance and competitiveness of diverse industries.

Lechner and Gudmundsson (2014) advocate for research on the influence of firm partner networks, among other organizational features, on implementation of competitive strategies (and by implication on performance) of small firms. Dinh and Clarke (2012) called for studies to be done for insights into the exact nature and role of social networks in business performance. Shwetzer *et al.* (2019) emphasized the need to understand networks, the actors as elements and their interactions in determining success of entrepreneurial ecosystems.

This study focuses on the significance of networking as a competence in the exchange of knowledge required for strategically responsive innovations. The research shall measure this dimension as it relates to the ecosystem level as the knowledge-link networking. To be industry-system appropriate, the networking competence has to be judged by the type, amount, timeliness, and relevance of industry information exchanged. This study defines networking competence as identifying sources and gathering industry-influencing knowledge (demand/technology/political/etc.) for decision-making in value-addition activity.

2.3.5 Pursuing

Pursuing has been studied by Lans *et al.* (2011) as a dimension of entrepreneurial competence. According to Lans *et al.* (2011) the pursuing dimension, which this study adopted, is described as an opportunity-related entrepreneurial competence (pursuing is also related to relationship and commitment competencies) characterized by taking initiative and proactive searching. Jain (2011) summarizes other research to describe pro-activeness as the entrepreneur's behaviour of aggressively pursuing favourable business opportunities to enhance competitive position. Gartner and Baker (2010) assert that opportunity and its pursuit are central concepts in the entrepreneurship process. Shir, Hedberg and Wiklund (2014) inadvertently raise the concept of pursuit as crucial to expressing entrepreneurial motivation. Kuratko (2014) asserts the entrepreneur's purposeful searching. Pursuing becomes relevant to the system when the entrepreneur takes steps to improve performance in areas relevant to (industry) competitiveness.

Because of the identification of pursuing with proactive behaviour, we turn to psychological entrepreneurship theories to find the relationship between proactivity concept as a behaviour and its outcomes. Meta-analysis of proactivity research by Tornau and Frese (2013) describe proactivity as a personality-based concept clearly associated with initiative and that shows positive correlations with work-related performance. Proactivity was found to be important for business-related individual performance and innovation, even when acknowledging impinging environmental conditions. The concept of pursuing is related to recognition of opportunities because the latter have to be acted upon for results of entrepreneurship to be seen. Kuckertz *et al.* (2017) describe behaviours linked to perceived entrepreneurial opportunities, involving developing products, acquiring human and financial resources to set up an organization, as opportunity exploitation. Entrepreneurial loss, the converse of entrepreneurial rent, is due to failure to recognize and act on opportunities (Wasdani & Mathew, 2014). Entrepreneurship fueled by opportunity (as opposed to necessity) makes up seventy-eight percent of successful innovation-driven economies and 69 percent of factor and efficiency-driven economies (GEM, 2015).

In this research pursuing is defined as searching and taking innovation action to take advantage of opportunities especially ahead of similar competing endeavours. Innovation action can be termed as entrepreneurial creation or venturing that may be in form of venture formation, introduction of an innovation or strategic change for business improvement.

2.3.6 Creating

This study considers analyzing as presented by Lans *et al.* (2011) as only a part of the more crucial competence of creating. McMullan and Kenworthy (2015) affirm other scholars' assertion that entrepreneurship is a creative endeavour. McCelland's seminal study in 1964 on creativity as a psychological trait shared by entrepreneurs has been affirmed by various scholars (Kuratko, 2014). In presenting the General Theory of Entrepreneurial Creativity (GTEC), McMullan and Kenworthy (2015) assert that entrepreneurial creativity is the primary causative variable of entrepreneurial outcomes. They present entrepreneurial creativity as a multi-dimensional variable that is actualized through performance outcomes.

Commonly studied in entrepreneurship as an ability (creativity as the ability to create), creating is a competence in that it can be developed and improved (Kuratko, 2014). What Lans *et al.* (2011) acknowledges as a conceptual competence of analyzing (interpreting and inferring) is only one dimension of creating whose other dimension is synthesis. In psychology, creativity has dimensions of originality and functional value (Dickhut, 2003). Weinzimmer, Michel and Franczak (2011) argue that the creativity-performance link in organizations should be understood as being mediated by action orientation, or a firm's ability to implement creative ideas. The perspective adopted by this study is one of analysis being psychological (cognitive) part of broader of creating competence which involves not only analyzing but also synthesizing to come up with original ideas that are of functional value. Gartner *et al.* (2010) allude to the fact that entrepreneurial re-configuration of resources for the pursuit and development of business opportunities is a product of an entrepreneur's imagination.

This research chooses the perspective that the outward expression of this imagination in entrepreneurship is entrepreneurial creation (creating in entrepreneurship is imagination application of entrepreneurial ideas). The creating dimension is thus developed and defined in this study as the conceptual and behavioural competence of analyzing and synthesizing seemingly unrelated concepts of a situation to understand relationships, infer implications of components and develop novel combinations that can be applied. It is entrepreneurial when it involves reconfiguring resources (for example physical or knowledge) for pursuit of business opportunities.

2.3.7 Innovation

Innovation involves creativity and is seen as central to entrepreneurial endeavours. Innovation has been presented as a process, an outcome and as a mindset in entrepreneurship (Kahn, 2018). While some scholars study innovation as innovativeness from a personality dimension of entrepreneurship, others take it as a possible outcome metric (Kerr *et al.*, 2017). According to Al-Ansari, (2014) the practice of innovation is a path to firm growth performance, fortifies economic growth and offers solutions to economic and social challenges In the S-Curve of Entrepreneurship, Acs *et al.* (2015) assert that innovation-driven entrepreneurship should be a goal as it results in higher future economic development than efficiency-driven, and less so factor-driven entrepreneurship. Dinh and Clarke (2012) empirical study confirm that innovation is associated with better firm performance. Blanchard (2020) asserted that innovation as an entrepreneurial strategy of business owner/managers positively influenced the growth and sustainability of MSMEs (Micro, Small and Medium Enterprises). Blanchard (2020) highlighted the role of symbiotic interactions in a region’s businesses in fostering a supportive micro-environment for their growth and sustainability through innovation. In this study, innovation is studied as an outcome of entrepreneurship.

Kuratko (2014) defines innovation as the process by which entrepreneurs convert ideas or opportunities into marketable solutions. Innovation involves creativity and is seen as and as central to entrepreneurial endeavours. In his conceptualization of entrepreneurship, Bjerke (2007) avers that creativity, innovation and entrepreneurship are linked as follows: creativity comes up with new ideas, innovation applies these new ideas while entrepreneurship is coming up with new applications which others can use as well to fill a need and / or satisfy some demand, whether existing or created. Quoting Joseph Schumpeter, Acs *et al.* (2015), Audretsch *et al.* (2012) and other scholars assert that entrepreneurship as a way to economic development, and is expressed through innovation which in turn is the commercialization of creative ideas and inventions. One can therefore premise that entrepreneurial drive determines and precedes innovation in occurrence.

Dinh and Clarke (2012) studied input, product, process, delivery and market innovations. Al-Ansari (2014) studied similar indicators of innovation practices ("trial of new ideas, introduction of new innovations, pioneer nature of marketing new innovations, management search of new systems and methods, creative in methods of operation, usage of up-to-date technologies, development of new market segments, usage of new marketing methods, new ways of establishing relationships with customers, and spending resources on research and development for new innovations") as an intervening determinant of business growth performance. Further Carayannis and Provance (2008) assert that in finding indicators for measurement of innovation should consider firm idiosyncrasies (such as size, objectives and activities of business), include not only input and output (product / patent) variables, but also indicators of process (e.g. efficiency) and qualitative value.

Keeley *et al.* (2013) discuss ten types of innovation ranging in focus from internal to external in terms of distance from customer experiences. Seven types of innovation can be gleaned from literature cited above and are hereby paraphrased by the researcher. These are input innovations (introducing new sources of raw material or inputs in a process), product innovations (a new or improved product offering), process innovation (new procedures for production), management innovations (administrative procedures and policies), organizational innovations (new organizational forms, structures or cultures), delivery innovations (new ways of delivering value, including peripheral support services) and system innovations (changes in system components relationships in a bigger entity). Claus (2016) uses similar types of indicators from Business Model Innovation (BMI) research as sub-constructs of innovation. From scholarly literature, the researcher identified and paraphrased nine types of innovation for use as measurement variables. These included revision of the seven types and others such as capability innovations (as input innovation involving adaptation of new knowledge for change in abilities), new customers (development of new markets for existing products) revenue and cost structure innovations (new earning and spending derived from changes in financial administration practices). A summary of how the innovation dimensions have been adapted into nine indicators from the Keeley *et al.* (2013) and other typologies for this study is given in Table 3.8. Input innovations are left out due to the limitation of leather as an input defines the industry boundaries. Innovation is thus defined as the creation, development and implementation of new value or a system to deliver value and their exploitation as a usable technique or product that gives value. Innovation includes new business products, methods and models (Bjerke, 2007; Kuratko, 2014).

In this study innovation is seen as a mediating variable between entrepreneurial drive and entrepreneurial performance, using Acs *et al.* (2015) argument that innovation is a path to growth performance. According to Bless, Higson-Smith and Kagee (2006), an intervening variable is a consequence of the independent variable and determines the dependent variable. The intervening variable shows the link between the independent variable and the dependent variable. It specifies the mechanism through which there is a causal link between the independent and dependent variables (Neuman, 2009). Kenny (2016) clearly articulates that a mediator variable is also an intervening or process variable that may have partial or full mediation on the dependent variable. In complete mediation, the independent variable has no effect on the dependent variable when the intervening variable is controlled.

2.3.8 Performance of Value-system Actors

In studying small firms, various scholars affirm the multi-dimensional nature of performance and have used identified financial and non-financial measures of performance as an outcome of entrepreneurship (Zahra, 1991; Zahra and Covin, 1995; Wiklund, 1999, Wiklund and Shepherd, 2003 and 2005; Wang, 2008; Arbaugh, Cox and Camp, 2009; Rauch *et al.*, 2009; Jain, 2011; Sanchez, 2012; Al-Ansari, 2014). Foundations of firm performance measures in entrepreneurship studies were laid by Lumpkin and Dess (1996) as: sales growth, market share, profitability, overall performance and shareholder satisfaction. Lumpkin and Dess (1996) advocate for use of multiple and broad performance dimensions as growth-induced resource demand may lead to a favourable outcome on one measure and an unfavourable outcome the other (for example, investment increasing market share while reducing profitability).

Meta-analysis by Rauch *et al.* (2009) give a guide to the types of firm-level measures used for performance as a variable dependent on entrepreneurial orientation. Jain (2011) adds overall firm growth and behavioral outcomes to the list of performance dimensions. In discussing performance of firms, including their importance to aggregate industry and country effects in the face of globalization, De Loecker and Goldberg (2014) argue that there is need to distinguish between profitability and efficiency as performance measures. De Loecker and Goldberg (2014) caution common reliance on profitability measures for failing to reveal mechanisms (distinction between price mark-ups and physical efficiencies) involved in performance improvements resulting from globalization. A review of 1991 – 2018 papers in peer-reviewed journals by Mahmudova and Kovacs (2018) showed that performance of SMEs was a broad and flexible concept having diverse economic (such as sales margin, profit, return on equity, cash flow, liquidity, stock performance) and non-economic (customer and employee satisfaction, and quality of products) measures in research. According to the study, performance measurement in SME's was seen as achievement of goals, it included growth indicators (such as profit and sales growth) and was used for improvement.

While recommending for empirical studies, Bakar and Zainol (2015) observed that vision, innovation, pro-activeness and risk-taking have a positive and significant relationship with performance of SMEs in Nigeria. Rauch *et al.* (2009) showed that entrepreneurial orientation correlated positively with financial and non-financial performance indicators of firms. Shane and Venkataraman (2001) observe that though relative performance between firms may explain strategic advantages of one firm over the other, such comparison may be necessary but not a sufficient for measure of entrepreneurship.

The need to have appropriate performance measures for businesses in entrepreneurship studies has continued to attract scholarly attention due to the importance for evaluation of success and development of theory. Mynit (2017) observed that while accurate performance measurement is critical to investigation of new venture outcomes, lack of uniformity or even guidance was found (in The Journal of Entrepreneurship Theory and

Practice between 2002 and 2013 as an example) in scholarly literature on entrepreneurship. Mynit (2017) highlighted the multi-dimensional nature and importance of growth in entrepreneurship performance measurement, in addition to common use of both primary and secondary sources, and both subjectively and objectively-reported data.

Manufacturing industry performance measures can be in terms of production levels, productivity and quality. The determinants of industry performance discussed by Mwinyihija (2015) include human resource development, entrepreneurship, enterprise productivity, technological development, infrastructure, quality standards and testing, research and development and support services through government interface with business. Kenya's leather industry performs poorly compared to global and regional competitors in terms of productivity, quality and cost of products. Industry-level policies and strategies are therefore required to enhance performance (Hansen *et al.*, 2015). Mwinyihija (2016) asserts the importance of engaging entrepreneurship of participants especially in the leather processing and goods manufacturing for the leather sector's potential.

Siepel and Dejardin (2020) highlight the importance of matching performance measures in entrepreneurship to research design – that is the theory and goals informing the exploration. To ensure that the performance measures used in this study are relevant to the value-chain actor and the industry, they are evaluated for collective contribution to industry-ecosystem performance or competitiveness outcomes. Performance goals may be pursued independently at value-chain actor level but inevitably contribute to industry-ecosystem level performance. Some performance measures can be aggregated such the production, productivity and financial types. Using nine measurement criteria that accommodate different approaches in this study allows for flexibility and applicability to diverse contexts, including subjective self-reported measures similar to the study by Ming and Yang (2009). Performance is defined here as the as desirable or planned outcomes of firms and industries, these include such as goals or achievements for firms and industries such as production quantity, production quality, productivity, sales, market share, profit, stakeholder satisfaction and growth in these dimensions (which may also include innovation), expressed in qualitative or quantitative measures. Of particular interest are outcomes that can be aggregated from firm to industry level (Shane and Venkataraman, 2001; Rauch, Wiklund, Lumpkin & Frese, 2009; Stephan, Hart & Drews, 2015).

2.4 Empirical Literature Review

This section discusses recent empirical studies relevant to the study variables. Empirical evidence of studies in dimensions identified of entrepreneurial drive and their relationship with entrepreneurial outcomes of innovation and performance is provided. The findings from these studies and how they support or dispute the relationships are highlighted and summarized.

2.4.1 Vision for Growth

Early research by Locke showed significant direct and indirect effect through communication, of vision on enterprise performance (Locke and Latham, 2006). In a study of strategic planning and growth in Slovenian small firms, Skrt & Antoncic (2004) empirically demonstrated that entrepreneurs who developed and operationalized a growth vision as part of strategic management actually induced growth for their ventures. The survey that collected primary qualitative data from firm managers for hypotheses testing found that a higher percentage of growth firms placed more emphasis on strategy formulation, where formulation of a vision was more important than a mission statement, than was the case with non-growth firms. They recommend assessment of firm growth across various dimensions and application of strategic planning by entrepreneurs for growth benefits in small firms. Kerr *et al.* (2017) showed that entrepreneurs bring goals and aspirations to their pursuits

Chi-hsiang, (2015) studied integration of shared vision on entrepreneurial management of new Chinese ventures from a sample of entrepreneurial managers and teams in 246 firms. Chi-hsiang (2015) asserts that entrepreneurial vision originates from the entrepreneur and links present and future states and it has a linear and causal relationship with performance. Chi-hsiang, (2015) found that entrepreneurial vision correlates positively with factors mediating entrepreneurial performance, namely vision shared with an entrepreneurial team, internal integration of vision and external vision integration. Internal vision integration had a significant mediating effect on the indirect effect of shared vision on performance of new enterprises (Sobel *t*-test of 4.33 met the statistically significant value of 1.96). Recommendations from the study were that entrepreneurs should have a shared vision with their team members as well as further research in diverse industries and appropriate performance measures. Thinji and Gichira (2017) studied vision, goal setting and their communication as a construct of an entrepreneurial commitment factor in determining SME performance in Kajiado County, Kenya. The results showed that commitment had a significant positive correlation with SME performance. Donkor, Donkor, Kankam-Kwarteng and Aidoo (2018) used vision, mission statement, strategies and actions for objectives, and a prioritized implementation schedule as four measures of strategic goals. Their empirical study found that strategic goals significantly increased financial performance of select SMEs in Ghana.

2.4.2 Opportunity Recognition

Using venture growth and novelty of value measures as proposed by Wilkund, Puhakka (2002) confirmed previous studies showing that proactive behaviour of opportunity recognition strongly determined performance of young ventures. According to Puhakka (2002) opportunity recognition behaviour variables positively correlated with performance variables of growth and newness value. Special understanding of the value of uncommon opportunities leads to success in achieving entrepreneurial income (rent) and is a characteristic that distinguishes entrepreneurs from non-entrepreneurs (Wasdani & Mathew, 2014). Wasdani and Mathew (2014) surveyed 279 principal owners and decision makers as entrepreneurs at various stages of the entrepreneurial journey (potential, prospective, early- and late-stage entrepreneurs) and found potential for opportunity recognition was especially influenced by social capital. Kuckertz *et al.* (2017) found that opportunity recognition was associated with innovation (0.29, $p<0.001$, accounting for up to 55% of innovation. Further, while opportunity recognition had no direct effect on businesses started, it had a significant indirect effect through opportunity exploitation (0.15, $p<0.01$), contributing up to 10% on number of businesses started.

Using qualitative data and regression analysis at individual context, Wang, Ellinger and Wu (2013) found that entrepreneurial opportunity recognition significantly influenced individual-level innovation performance of R&D personnel in Taiwanese high technology firms Further, perception of industrial environment on opportunities was a predictor opportunity recognition but individual traits could not explain the process. The study by Wang *et al.* (2013) is one of few that provides empirical evidence linking opportunity recognition and entrepreneurial outcome variables and whose recommendation was extension to other industries.

2.4.3 Calculated Risk-taking

Kreiser, Marino, Kuratko and Weaver (2012) surveyed relationship between a disaggregated entrepreneurial orientation construct (comprising innovativeness, pro-activeness and risk-taking dimensions) and firm-level performance amongst 1,668 SMEs in nine countries across 13 different industries. The survey collected self-reported data from SME owners and general managers. Kreiser *et al.* (2012) found a predominantly positive influence of innovativeness and pro-activeness on SME performance, while risk-taking had a predominantly negative influence on SME performance. The negative influence of risk-taking on performance was theorized to be due to costs associated outweigh benefits in resource-constrained SMEs. Naldi *et al.* (2007) used the same entrepreneurial orientation variables (innovativeness, pro-activeness and risk-taking) in a survey of Swedish SME managers' self-reporting comparative past firm performance relative to competition. Naldi *et al.* (2007) found a negative relationship between risk-taking and performance (using quantitative measures of profit, sales growth, cash flow and net-worth growth) of Swedish family SMEs but attributed the contradiction with earlier research to, among other factors, the less analytical / calculated risk-taking associated with poor formal controls in family firm contexts. Therefore Naldi *et al.* (2007) concluded that greater formalization and external monitoring may lead to better outcomes of financial performance even though it may stifle pursuit of entrepreneurial opportunities.

In contrast, more recent study by Wang and Poutziouris (2010) surveyed 236 family firms in UK for risk-taking intensity by the owner-managers and found a positive correlation between risk-taking and firm sales growth when controlled for pertinent firm and entrepreneur characteristics. They recommended practical risk-taking management actions for family firms. Kraus *et al*. (2012) surveyed key informants (CEO's) of 164 Dutch SMEs in diverse industries to test effects of a multi-dimensional model of entrepreneurial orientation on performance during economic crisis. Both pro-activeness and innovativeness were found to lead to better performance but high-levels of risk taking had negative impact on performance. They explained negative effect of risk-taking on Dutch SMEs performance as effects of economic turbulence and therefore recommended moderate "calculated risk-taking" during turbulent times. Ndubisi and Iftikhar (2012) studied the entrepreneurship-innovation-performance link in 124 Pakistan SMEs using key informants as respondents. Risk-taking as one of the entrepreneurial orientation dimensions was positively correlated to firm innovation and quality performance. They recommended similar studies to be carried out for SMEs in diverse sectors and contexts. Moderate risk-taking as a cognitive process can be considered as related to Saras Sarasvathy's (2001) effectuation principle of affordable loss in which an entrepreneur considers the downward risks of a decision.

Thus empirical evidence showing relationships between risk-taking and business performance is ambivalent and context dependent, it also supports theories suggesting outcomes of entrepreneurship are dependent on a propensity to take risks as a distinct dimension of entrepreneurial orientation. It is worth noting that the risk-taking characteristic though associated with firms and their outcomes was in most cases studied as an individual-level trait of entrepreneurship.

2.4.4 Networking

Dinh and Clarke (2012) studied performance and characteristics of African manufacturing SMEs (formal and informal) and compared them with those of other regions. The study used face-to-face interviews with top managers or owner-managers as key representatives of the minimum targeted 250 randomly sampled firms in each of five countries. Empirical evidence from manufacturing firms showed that in some countries social networks have a weak positive correlation with firm size as a performance measure. The study suggested that social links possibly provide firms with business assistance and information (as cronyism, corruption or social class exchanges) such as identifying new markets, sources of raw materials, securing external finance, recruiting workers, exchanging technological information and obtaining and repairing machinery. Social links served the same purpose as would business associations in some countries (Dinh and Clarke, 2012). While concluding that networks in a country's manufacturing sector may determine performance, Dinh and Clarke (2012) recommended more research to establish the exact role (causal or otherwise) of social networks on business performance.

Wasdani and Mathew (2014) found that bonding social capital, also studied as strong ties networks by other researchers, positively influenced the potential for recognition of opportunities by at all stages: pre-stage early-stage and late-stage entrepreneurs. Wasdani and Mathew (2014) characterized the importance of opportunity recognition in terms of determining entrepreneurial success such as creation and getting income. Social networks was a significant antecedent and influencer of entrepreneurial opportunity recognition, and further contributing significantly to individual-level innovation performance of research and development (R&D) personnel in Taiwanese high technology industry (Wang *et al.*, 2013).

2.4.5 Pursuing

To the best of the researcher's knowledge, very little empirical research is available on pursuing as construct of entrepreneurial competence. Since pursuit has been equated to activities for development of opportunities (Lans *et al.*, 2011) towards creation of new value, this study examined the empirical evidence of a relationship between firm-level performance and the construct components of ‘taking initiative’ and ‘pro-activeness’ (or being proactive) as characterized by Lans *et al.* (2011). Kuckertz *et al.* (2017) definition and measures of opportunity exploitation as behaviour theoretically align with pursuing as a behaviour that follows and acts upon perceived opportunities. Measurement items Kuckertz *et al.* (2019) study asked about actions such as setting up an organization, developing markets, and finding human and financial resources following recognition of opportunity. Kuckertz *et al.* (2017) found that their opportunity exploitation behaviours were significantly associated with innovation (0.52, p<0.001), explaining up to 55 % of innovation. Further, opportunity exploitation was linked to number of businesses started (0.35, p<0.01), contributing up to 10% on number of businesses started. They observed that opportunity exploitation is a path to starting new businesses from recognized opportunities.

Lumpkin and Dess (2001) found that pro-activeness – a response to opportunities – is positively related to firm performance in dynamic environments or growth stage industries where conditions are rapidly changing and there are numerous opportunities for advancement. Kraus *et al.* (2012) found a direct and significant positive contribution of pro-activeness (taking initiative to shape the environment) to performance of Dutch SMEs even in turbulent environments

Madhoushi, Sadati, Delavari, Mehdivand and Mihandost (2011) studied the role of knowledge management in mediating entrepreneurial orientation-innovation performance link in 164 Iranian industrial-zone SMEs found that entrepreneurial orientation measured by five dimensions affected firms innovation performance directly (and indirectly through knowledge management). As a dimension of the entrepreneurial orientation construct in the Madhoushi *et al.* (2011) study, pro-activeness had the highest path coefficient compared to the others.

2.4.6 Creating

To the best of the researcher's knowledge, little scholarly work has been carried out on creating as an entrepreneurial competence. Instead, there is more research, but in this case obliquely relevant, on creativity as a significant cognitive disposition in entrepreneurship. Constructs of creativity and even the measurement items tend to capture behavioural outputs of creativity rather than the cognitive tendency. Thus to this extent, these past studies give an insight into creating as a competence.

By using innovative capability as a surrogate for measuring entrepreneurial creative performance of new ventures, Ming and Yang (2009) studied 300 new ventures in Taiwanese incubators to develop typologies based on recognition of opportunities and entrepreneurial creativity as dimensions. The study involved a responses to a survey by one key informant from every new venture using a questionnaire items on tolerance for ambiguity, creativity, insight and imagination to measure entrepreneurial creativity. Ming and Yang (2009) assert that entrepreneurial creativity, which is an intangible resource leading to market-focused, novel and value-added products, has a positive influence, on a performance (satisfaction and innovative capability) outcome in entrepreneurship.

McMullan and Kenworthy (2015) surveyed empirical evidence for the role of creativity in entrepreneurial performance and found research, including meta-analytical studies, showed a positive correlation between creativity and entrepreneurial characteristics and outcomes. McMullan and Kenworthy (2015) reveals that various scholars have used diverse creativity measures, often with cognitive perspectives. McMullan and Kenworthy (2015) assert that personal creativity of the lead entrepreneur has a positive, statistically and practically significant relationship with business (financial) performance.

2.4.7 Innovation

Al-Ansari (2014) studied external and internal antecedents of innovation practices, and the relationship between innovation practices and business growth performance in 198 manufacturing and service-oriented Dubai market SMEs using a researcher-designed quantitative survey instrument. The study found that SMEs innovation practices had a significant positive influence on business growth performance (squared multiple correlations, R^2 of innovation practices to innovation business growth performance and general business performance were 0.471 and 0.247 respectively (Al-Ansari, 2014). The study recommended adoption of innovation strategies by academics, venture management practice and SME development policies.

Dinh and Clarke (2012) confirm that innovation is associated with better performance in manufacturing firms. Dinh and Clarke (2012) found a positive correlation between firm innovation activities, especially introduction of new products and new customer delivery systems, and manufacturing firm growth performance. A study of the influence of innovativeness on growth of SMEs in Nairobi County showed that innovativeness, as a resource-based competence, had a significant linear relationship with firm growth as a performance measure. The study recommended that SME owners/managers apply process innovations to promote competitiveness and venture performance (profitability and growth) (Ngugi, Mcorege & Muiru, 2013).

McMullan and Kenworthy (2015) reviewed empirical evidence on the relationship between creativity and innovation in SMEs showed that various scholars have measured innovation outcome in terms of perception, degree or novelty of product or process introductions. They conclude that creativity (individual and firm-level) has a positive and statistically-significant relationship with innovation. Kollmann and Stockmann (2012) drew on theoretical knowledge of entrepreneurial orientation, exploratory and exploitative innovation and the resource-based view of the firm to provide empirical evidence for the entrepreneurial orientation-innovativeness-performance link in 228 ICT firms. Kollmann and Stockmann (2012) found that exploratory and exploitative innovation, as behaviour rather than an orientation, mediated the link between entrepreneurial orientation variables and firm performance (innovativeness through exploration and exploitation; risk-taking through exploration; pro-activeness through exploration and exploitation).

In a study of entrepreneurship-innovation-performance relationship in 124 Pakistani SMEs, Ndubisi and Iftikhar (2012) found that innovation has a significant direct relationship with quality performance and that innovation mediates the entrepreneurship-performance link. Al-Ansari (2014) present innovation practices as intervening the independent external / internal factors variable and the dependent business growth performance variable. Evidence for the entrepreneurship (entrepreneurial orientation) and innovation performance link is well articulated by Madhoushi *et al.* (2011). Innovativeness of SMEs has been found to significantly and positively affect business performance during market turbulence ($\beta=0.34$, $p<0.01$) (Kraus, Rigtering, Hughes & Hosman, 2012; Kreiser *et al.*, 2012). Using Structural Equation Modeling, Rajapathirana and Hui (2018) empirical study established that innovation performance (product, process and market innovations) was antecedent to, and had a significant positive impact on market performance of insurance industry firms in Sri Lanka (path estimate at 0.230, $p<0.01$). Market performance consequently had a significant positive effect on firm financial performance (path estimate at 0.382, $p<0.000$).

Donkor *et al.* (2018) studied innovation capability as the ability to use of new ideas in responding to market with changes such as in introduction of new products, processes and business models. They found that innovation capability Ghanaian SMEs studied was not only significant in improving financial performance, but also moderated the increasing effect of strategic goals on financial performance. Adam and Alarifi (2021) asserted that innovation practices of SMEs were implementation of new ideas in products, processes, marketing mechanisms or administrative practices. Using PLS-SEM bootstrapping, Adam and Alarifi (2021) found that innovation practices had a significant positive influence on business performance (STD beta=0.45, t=8.432, p=0.00) and strongly linked to business survival (STD beta=0.054, t=3.782, p=0.00) during the Covid-19 pandemic.

2.4.8 Performance of Value-system Actors

Various scholars have empirically demonstrated the relationship between entrepreneurial attributes, innovation and firm-level performance. Santos and Barito (2012) surveyed 111 Brazilian senior managers and board members to investigate the dimensionality of firm performance concept drawing from stakeholder theory. The study demonstrated that firm performance is a multi-dimensional concept with both financial and non-financial dimensions tied to stakeholder interests. The study recommended the application of comprehensive measures comprising profitability, growth, social and environmental performance, employee and customer satisfaction in performance management and research. Lekovic and Maric (2015) found a positive correlation between use of subjective and objective performance/success measures for SME's in Serbia and recommended the use of both for complimentary purposes.

An empirical study by Ebrahimi, Shirsavar, Forootani, Roohbakhsh and Ebrahimi (2018) showed that dimensions of entrepreneurship had a positive and significant relationship with innovation and (quality) performance in SME's regardless of firm size. Sanchez (2012) studied 450 young Spanish SMEs using qualitative data from key informants and found empirical evidence that enterprising characteristics, in particular entrepreneurial competence at individual level of entrepreneurs, directly and indirectly determine firm performance. Dinh and Clarke (2012) concluded that entrepreneurship may influence performance of manufacturing firms in Africa. Kraus *et al.* (2012) used qualitative data on three financial measures of performance: gross margin, profitability and cash flow and found they were influenced by entrepreneurial orientation traits individual CEO's. Kraus *et al.* (2012) justified the use of perceived performance data reported by Dutch SME CEO's as respondents in place of archival performance.

Al-Ansari (2014) showed that business growth performance is mediated by innovation practices in Dubai SMEs. Ming and Yang (2009) used entrepreneurial satisfaction and innovative capability as performance measures and found that these variables relationship with firm performance had a high score. Using quality as a performance measure, Ndubisi and Iftikhar (2012) found entrepreneurship (variables applied of risk-taking, pro-activeness and autonomy are associated with the entrepreneurial orientation trait) is positively correlated with firm performance. McMullan and Kenworthy (2015) records empirical studies showing the relationship between entrepreneurial creativity and innovation (eleven studies) and with business growth and financial performance (38 studies). The studies show that entrepreneurial outcomes of innovation and business development (growth and financial performance) favour a positive relationship with entrepreneurial creativity.

Mwinyihija (2015) measured performance of leather footwear manufacturing SMEs in COMESA region using labour productivity. His study quantitatively analyzed number of footwear produced per worker and found average labour productivity per day of 3.4 pairs of men shoes, 5 pairs of ladies shoes, 4.8 pairs of school shoes and 4.6 pairs of sandals. This compared poorly with productivity above ten pairs per person observed in India and China.

2.5 Critique of Existing Literature

There is increasing literature showing interest in entrepreneurial and innovation ecosystems as basis of economic performance as well as policy formulation (Cohen, 2005; Audretsch, 2007; Nambisan and Baron, 2012; Mason & Brown, 2013; Kshetri, 2014). The GEI study (Acs, *et al.*, 2015) falls short of identifying industries as the crucial basis of entrepreneurial systems for their determination of competitiveness in a globalized economic order. Cohen (2005) has postulated industrial ecosystems and clusters as the foundational units of entrepreneurship and economic development. From a systems perspective, Cohen (2005) presented components of entrepreneurial ecosystems but failed to appreciate and separate the inputs, processes and outputs as foundations of systems. By focusing on describing system structure components, Cohen (2005) failed to address elements of transformation in entrepreneurial ecosystems. However Cohen (2005) does indirectly confirm the role of knowledge, its creation, accumulation, mastering, dissemination or access and application in innovations as important processes. Ecosystem perspective studies therefore need to capture diverse role players, their goals and influence. Alvedalen and Boschma (2017) note the significance of the individual in past entrepreneurship studies and the need to understand complexities of interactions between components, and the agents of dynamism in entrepreneurial ecosystems. A linkage of individual entrepreneurship to the entrepreneurial ecosystem provides a potential analytical framework for understanding the dynamics involved (internal and external interactions).

There is no clarity of levels of analysis nor understanding of entrepreneurial characteristics. Studies show conceptual confusion of entrepreneurial characteristics, with psychological dispositions, motivation, cognitive abilities and behavioral manifestations all mixed up in the constructs (Lans *et al.*, 2011; Rauch & Frese, 2007). Acs *et al.* (2015) describe entrepreneurship in terms of fourteen pillars in three categories: entrepreneurial attitudes, abilities and aspirations. Despite recognition of individual (micro-level) and institutional (macro-level) dimensions of entrepreneurship, their pillars do not make a good distinction between psychological or cognitive and competence dimensions such as when opportunity perception and start-up skills are classified as entrepreneurial attitudes.

Similarly, there is no agreement nor recent studies on entrepreneurial drive yet the concept, and its twin the entrepreneurial spirit, are regularly mentioned in literature. This is shown in studies by (Carland *et al.*, (2002) and by Florin *et al.*, (2007) that identify latent variables associated mostly with psychological attributes of entrepreneurship. Florin *et al.*, (2007) attitudinal perspective of entrepreneurial drive as having object-related cognitive, affective and behavioural dimensions is in line with goal-related motivation construct with the same dimensions studied in psychology (Toure-Tillery & Fishbach, 2014). Although Ensley *et al.*, (2000) report entrepreneurial drive described as a “psyche” leading to entrepreneurial behaviour, the CEI they developed has little in terms of measuring this behavioural component. Even innovation and risk taking are seen from a psychological propensity perspective rather than their practical expression while self-efficacy is rightly described as a cognitive belief in one’s abilities.

An entrepreneurial drive is deduced from literature as a motivation and developed as construct from combining cognitive (orientation) and behavioural (competence) dimensions of entrepreneurship, then linked to entrepreneurial outcomes of innovation and performance (Wright, 2016; Wasdani & Mathew, 2014; Stephan *et al.* (2015). Entrepreneurial orientation is seen as the cognitive dimension of drive, entrepreneurial competence as an affective-behavioural component while innovation and performance are the behavioural outcomes (goals) as suggested by motivation theory (Toure-Tillery & Fishbach, 2014; Florin *et al.*, 2007). Entrepreneurial orientation is developed as a psychological disposition construct comprising envisioning (Ensley *et al.*, 2000; Armstrong & Hird, 2009; McMullan & Kenworthy, 2015), opportunity recognition (Shane, 2000; Wasdani and Mathew, 2014; Acs *et al.* 2015) and calculated risk-taking (Zhao *et al.*, 2010; Acs *et al.* 2015; Gupta, 2019). Lans *et al.* (2011) three-factor model of entrepreneurial competence is empirically tested and supported by theoretical literature is adapted here. Psychological theories therefore provide an understanding of the entrepreneurial drive concept as seen in literature on entrepreneurship (Rauch & Frese, 2007; Rauch, Kobia & Sikalieh, 2010; Kerr *et al.*, 2018).

Various studies show that entrepreneurial characteristics, especially creativity orientation and creating competence, have a causal link with innovation, and subsequently with performance (Bjerke, 2007, Hisrich *et al.*, 2009). Al-Ansari (2014) and Ndubisi and Iftikhar (2012) study innovation as a moderating variable in the entrepreneurship-performance link. However, there is more scholarly work firmly asserting that innovation is not only antecedent to, but also a determinant of, firm performance (Bjerke, 2007; Hisrich *et al.*, 2009; Keeley *et al.*, 2013; Dinh & Clarke, 2012, McMullan & Kenworthy, 2015). While the role of innovation in positively influencing firm performance (especially profitability) has been questioned (Rauch *et al.*, 2009), the same and other studies have asserted that innovation positively influences performance of both firms, industries and economies in the long term (Dinh & Clarke, 2012; Al-Ansari, 2014; Acs *et al.* 2015). This study adopted innovation as a mediating determinant of firm and consequently industry performance.

Studies reviewed here assert that performance should be studied as a multi-dimensional concept and an outcome of entrepreneurship goals. Converging yet sometimes diverse performance measures for firms have been proposed and used but few would capture industry goals of competitiveness. For example, measures from Lumpkin and Dess (1996) and Santos and Barito (2012) do not capture innovations that are critical for industry renewal. Santos and Barito (2012) are elaborate on their measures and uniquely capture environmental, social and employee satisfaction. The work of Al-Ansari (2014) and Dinh and Clarke (2012) give due recognition to the role of innovation in performance of firms and industries. Performance measures in literature are analyzed at firm level most studies advocate use of diverse measures that include both financial and non-financial indicators (even innovation), which may be archival, self-reported or secondary even with possible distinction between growth and profitability measures (Rauch *et al.*, 2009). These include economic, social and environmental outcomes (Lumpkin & Dess, 2001; Rauch *et al.*, 2009; Santos & Barito, 2012; Stephan *et al.* 2015). Some like profitability, growth and stakeholder satisfaction may be influenced negatively by risk-taking and innovation in the short-term (Puhakka, 2002; Rauch *et al.*, 2009). Naldi *et al.* (2007) measure of business performance was on self-reported perceptions comparing financial performance with competitors. Therefore, this study developed various economic and social measures applied in different studies as growth or improvement changes (Lumpkin & Dess, 1996; Santos & Barito, 2012; Dinh & Clarke, 2012; Al-Ansari, 2014; Stephan *et. al*. 2015, Ebrahimi *et al.*, 2018). Profitability as performances measure is applied in this study with caution: it may be negatively influenced by risk-taking and innovation activities especially at early stages of new venture development.

Several entrepreneurship studies have controlled and found that firm-level demographic variables such as size, age and industry could either be controlled or are not significant factors in explaining entrepreneurship-innovation-performance linkages (Ndubisi & Iftikhar, 2012; Wang & Poutziouris, 2010; Naldi *et al.*, 2007). This paper acknowledges the role of such factors but considers them extraneous variables lying beyond the scope of this study.

2.6 Summary of Literature

Entrepreneurship is often studied at individual and firm level but globalized competition makes it necessary to study entrepreneurship at industry level. Scholarly literature explains entrepreneurship from economics, sociology, psychology, anthropology, and business management theoretical perspectives. Entrepreneurship is seen to have dimensions of the entrepreneur, processes and outcomes studied enterprise (or micro) and the economy (or macro) levels. Psychological theories of entrepreneurship have received much scholarly attention. Scholars in entrepreneurship recognize but fail to delineate the constructs of entrepreneurship at micro (individual), macro (firm) and meso (industry /economy) levels. They have attributed and measured what are fundamentally individual-level phenomena to other levels, especially the firm / venture. The constructs of entrepreneurship at individual level have lacked a solid foundation in psychology theories, such as when, dispositions, cognitions and behaviours are mixed up. This study attempts to ground individual entrepreneurship on psychology theories and uses systems theory to link the phenomenon to the environment through firm and industry outcomes. Literature also shows agreement on the need to have broad multi-dimensional measures of firm performance as an outcome of entrepreneurship but not on the variables. Similarly, innovation is either taken as a performance outcome, often as moderating or as in this study, a mediating variable of entrepreneurial performance.

This study develops constructs of entrepreneurial drive, innovation and performance in firms and industries from theoretical work in motivation psychology, systems thinking, industrial economics, entrepreneurship and innovation. The causal link between entrepreneurship, especially cognitive and behavioural entrepreneurship traits, and entrepreneurial as well as economic outcomes are well established in theoretical and empirical literature. Various scholars provide converging models, measures, methodologies and empirical evidence of the uni-directional linkages of the concepts. This chapter synthesizes these theoretical models into constructs of entrepreneurial drive, innovation and performance variables for further research. This review shows that there is theoretical and empirical literature to support a conceptual framework of a entrepreneurial drive as an individual construct of entrepreneurship drawn from psychological perspectives, that determines firm and industry performance through innovation.

This study elucidates the cognitive and behavioural frameworks employed in entrepreneurial endeavour including how they are interlinked and influence success for firms and industries in the face of global competition. Both theoretical and empirical studies show there is positive relationship between the independent variables, and the intermediate and dependent variables. Previous studies suggest a causal relationship between entrepreneurship and innovation as an intermediate outcome as well as eventual performance outcomes. This study identified ways of understanding entrepreneurial drive and how it affects performance of ecosystems at actor-role level.

2.7 Research Gaps

There has been a plethora of research on entrepreneurship theory and practice at individual and firm-level contexts. Often the research focuses conceptualizing entrepreneurship by delineating traits, processes and outcomes of entrepreneurship from different approaches but not limited to cognitive, behavioural and social (Shane and Venkataraman, 2001; Jain, 2011; Busenitz, Plummer, Klotz, Shahzad and Rhoads, 2014).

Few studies link individual entrepreneurial attributes to the industry-level. Armstrong and Hird (2009) recommended research in the role of individual entrepreneurial drive (of owner-managers) in determining venture performance. Due to the multiplicity of perspectives and forms of expression, there is still confusion and an inability to conclusively explain the essence of the entrepreneurship phenomena as has been observed by Lans *et al.* (2011). Dispositional constructs such as entrepreneurial orientation are equated with entrepreneurial behaviour and there is need to distinguish the two concepts (Kollmann & Stockmann, 2012). They present potent empirical evidence of innovation as a mediating factor in the entrepreneurial orientation (disposition) and performance (referred to as behaviour but taken here as outcomes). Further, in most literature, dispositional and behavioural dimensions of entrepreneurship are studied as firm-level attributes yet they are clearly measured as individual-level attributes. In addition, most literature reviewed recommended extension of entrepreneurship-performance linkage studies to diverse sectors, industries and contexts, especially as longitudinal research (Ndubisi & Iftikhar, 2012; Kraus *et al.*, 2012; Dinh & Clarke, 2012; Kreiser *et al.*, 2012).

While existing research has been relevant and points to the importance of the individual and the enterprise, globalized competition is as much the result of individuals and enterprises as it is from collective activities of an ecosystem of enterprises or firms in any given industry (Porter, 1990; Acs *et al.* 2015). This ecosystem perspective of economic performance especially in new or entrepreneurial ventures is gaining increasing attention (Cohen, 2009; Acs *et al.* 2015) but the role of individual entrepreneur's drive is not well accounted for. Sautet (2011) recognizes the role of individual motivation giving rise to 'systemic entrepreneurship'. He calls for empirical research to understanding the role of systemic entrepreneurship in low-income countries to solve the puzzle of abundant entrepreneurship and little socio-economic development to show for it (Sautet, 2011). Given the aforementioned, there is need to infuse entrepreneurship at all levels of economic activity and to adopt a systems (meso-level) perspective, rather than limiting the phenomenon to individual (micro-level) and enterprise (macro-level) approaches. Given the central role of the individual, the dimensions of system-level entrepreneurship have to take cognizance of characteristics related to the individual entrepreneur. Studying entrepreneurship at industry eco-system level has to involve finding dimensions appropriate for the system, seen as a sub-system of Audretsch's (2007) entrepreneurial society, while remaining integrated and relevant to the ubiquitous role of the individual entrepreneur as well as the enterprise.

There is also a dearth of studies relating networking, pursuing and creating as entrepreneurial competencies with entrepreneurial outcomes. As a recent study covering entrepreneurial vision in relation to performance, Chi-hsiang, (2015) did not establish the direct correlation between his construct of entrepreneurial vision and entrepreneurial performance, instead emphasizing on correlations with mediating variables. Further, diverse firm performance measures have been applied in studies but few have been explicitly linked to industry competitiveness. GEDI research (Acs *et al.* 2015) and Audretsch (2007) among few studies attributing entrepreneurship to national economic performance but few link phenomena to industry performance as an indicator of competitiveness.

Tornau and Frese (2013) recommend further research into the relationship between proactivity – here associated with the concept of pursuing – and business-related performance. Lans *et al.* (2011) recommended that further research establish the relationship between firm performance and the entrepreneurial competence variables of analyzing, pursing and networking as their study could not ascertain the extent of this relationship.

Despite acknowledgement of industry ecosystem perspective of on competitiveness and interventions to strengthen value-chain linkages in various industries (such as agriculture and leather in Kenya), there is a dearth of research to show the linkage of entrepreneurship to the industry level performance. There is low-key acknowledgement of the importance of the concept of entrepreneurial drive in entrepreneurship scholarship, there is little research data that either describes or relates this phenomenon to venture or industry performance.

Though the performance is recognized as a multi-dimensional variable determined by entrepreneurship as an antecedent, there is no firm agreement in literature on how it should be measured. Least of all as a consequence of entrepreneurship, there is no distinction between performance that is due to normal management and organic growth of firms or industries, versus that due to entrepreneurial initiatives. Static, non-comparative measures of performance cannot capture change associated with entrepreneurship. This study uses entrepreneurial performance that suggests significant changes and improvements of qualitative and quantitative nature.

Studies of entrepreneurship in Africa, especially in relation to industry ecosystem factors are minimal, thus creating a gap of reliable information to guide policy and practice. Manufacturing industries in Africa are growing in importance but are experiencing challenges of competitiveness in the rapidly evolving contemporary and global market place (Dinh and Clarke, 2012), especially in leather (Banga *et al.* 2015).

Entrepreneurship is seen as one of the solutions to unrealized performance potential in manufacturing and especially leather industry (Dinh & Clarke, 2012; Mwinyihija, 2015; Hansen *et al.*, 2015). Kenyan manufacturing industry, especially leather, is still plagued high costs and lack of competitiveness a fact that is decried by players (Mwinyihija, 2015). However there is a dearth of empirical literature to guide entrepreneurship policy interventions for manufacturing industries in Africa and Kenya, especially in a promising industry such as leather.

Thus, this study was designed to fill a conceptual gap of theoretical understanding entrepreneurial drive as an entrepreneurial characteristic construct of psychological traits and behaviours, and its influence of entrepreneurial outcomes. It also aimed at providing a new contextual perspective of entrepreneurship at industry ecosystem level. Both these conceptual and contextual approaches are increasingly acknowledged but little studied especially in Africa. Reviewed literature showed empirical studies have used survey methodology and hypothesis testing where venture managers are key respondents providing self-reported historical data on the main concepts of this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the philosophy, design and methodology that was used in this research. It includes the philosophical underpinnings and procedures of inquiry as the research design and methods adopted, including the target population and sampling, types of data and data collection techniques, a description of instruments used and how they were piloted. Also covered is tests of instrument reliability and construct validity.

3.2 Research Philosophy

This study adopted a post-positivist research paradigm which assumes that knowledge is shaped through empirical studies of probable yet objective causes of phenomena. A research instrument is designed to collect quantitative data on antecedents of entrepreneurial outcomes to confirm or refute theory. Thus, conjectures about drivers of entrepreneurship are made from theory and hypotheses about their cause and effect relationship tested. This approach contrasts with the constructionist, transformative and pragmatic approaches. The constructionist approach emphasizes theory generation from multiple socially influenced meanings. The transformative approach emphasizes action to change social issues. The pragmatic approach emphasizes on the problem and allows the use of multiple methods available to understand an objective and subjective world (Creswell, 2014).

3.3 Research Design

Research design is the plan that specifies and combines research elements, their relationships and methods in such a way as to maximize validity (Blanche, Durrheim and Painter, 2006). A research design is the conceptual structure of conducting a study from hypothesizing, operational implications of data collection to final analysis. It provides a blueprint for the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the plan and structure of investigation so conceived as to obtain answers to research questions; a specification of the appropriate operations to be performed to answer research questions. It involves decisions about what to study, what settings to investigate, how and when, which actors to approach, which processes to consider, what type of events to register and what instruments to employ (Kothari & Gaurav, 2014; Bless *et al.*, 2006).

This research was a cross-sectional survey employing quantitative design to study entrepreneurship variables and their relationships at industry ecosystem level. The study therefore adopted an exploratory design to refine variables under study, followed by a diagnostic design aimed at revealing the relationship between them Kenya's leather industry. Entrepreneurial drive was used as the independent variable, while innovation and performance were the mediating and dependent variables respectively. Statistical Package for Social Sciences (SPSS) version 21 was applied in the analysis of data. Approval for conducting the research in Kenya was obtained from the National Commission for Science, Technology and Innovation (NACOSTI) and a copy of the authorization is attached in Appendix VII.

Cross-sectional study designs involved collecting quantitative data at a point in time on a number of variables for exploring patterns of relationships (Lewin & Somekh, 2005). Diagnostic studies require rigid design structures to minimize bias and maximize validity (Kothari & Gaurav, 2014). According to Kothari and Gaurav (2014) exploratory research develops a hypothesis for testing, while diagnostic research concerns itself with whether certain variables are associated. Hypotheses testing can be used to test causal relationships between variables (Kothari & Gaurav, 2014; Babbie, 2008). This study involved testing the hypothesis to diagnose a causal relationship between the explored variables of entrepreneurship and performance at industry-ecosystem level. Similar studies by Lans *et al.* (2011), Kraus *et al.* (2012) tested the relationship between entrepreneurial characteristics and business performance. This study used reflective questions to collect self-reported data, from individuals as key-informants of value-system actors, which was quantitatively-coded for further analysis.

3.4 Target Population

Hansen *et al.* (2015) describe a leather value chain that includes livestock breeders, hides-and-skins dealers in addition to the leather and leather products manufacturers. Mwinyihija (2015) states that only a few of the leather manufacturers operating in Kenya are considered medium enterprises, the majority are considered small and micro enterprises and most are informal to avoid the tax burden. Unlike their formalized counterparts which are expected to have record keeping systems due to the need for regulatory compliance, informal businesses may lack proper business records. The Kariokor Market (KM) leather industry cluster was studied by Hansen *et al.*, (2015) as a representative of value-system actors in Kenya's leather industry. According to Hansen *et al.* (2015), there are 300 workshops and stores in Kariokor Market. Hansen *et al.* (2015) illustrate the value-system players associated with Kariokor Market (KM) cluster of leather-goods manufacturers as described in Table 3.1. The target population for this study was the 300 KM stores and workshops and 10 additional industry actors identified from Hansen *et al.* (2015).

Thus, leather as a product marked the industry boundaries. This included those who work directly with the leather as a product and those who are linked to the value-system through commitment to common system-level outcomes. Value-system players in different roles such as processors, delivery agents, secondary delivery agents, industry network associations, regulators and research agents. Silva and Filho (2007) provide an illustration of the scope of value-chain players in a general agricultural commodity and specifically in the South African beef industries. These include farming input suppliers, farmers (producers), marketing channel players, processors and goods manufacturers (first and second-level processing), retail traders (distributors) and eventual consumers. Within such an ecosystem, there are possible sub-systems for analysis.

Table 3.1: Roles and Identity of Some Leather Industry Value-system Actors in Kenya

Value-system Role	Value-addition Activities	Identity
Primary Processing	Tanners	Alpharama, LIK, Bata, Sagana, Azia, Dogbone
Secondary Delivery	Local traders of finished leather	Dimu, Dismas, Balozi, Ondiri
Secondary Processing	Leather-goods manufacturers at Kariokor Market	Various Kariokor Market MSMEs producers
Tertiary Delivery	Retailers and exporters of manufactured leather products	Various Kariokor Market MSMEs sell their own products
Industry Networking Support	Industry associations	Tanners Association, Cobblers Association. KFMA, LAEA
Policy and Regulatory Support	Industry policy formation, regulation and research	KLDC
Research Support	Leather research and education	AHITI, KIRDI, KEBS, KLDC, TPCSI, UoN, DeKUT, TU-K

Researcher's own tabulation and classification.

3.5 Sampling Technique and Sample Size

According to Kothari and Gaurav (2014) a sampling technique is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Probability and non-probability sampling are the two main techniques used in research. Sample size refers to the number of subject or cases selected from the sampling frame and which form the units of observation in a study (Mugenda & Mugenda, 2003). Sample size should neither be extremely small nor too large. It should be optimum that is fulfilling the requirements of efficiency, representativeness, reliability and flexibility (Kothari & Gaurav, 2014).

Mixed non-probability sampling method was applied involving the purposive sampling of a defined group of leather actors and snowballing to reach respondents from support institutions in order to have a representative sample of the industry. Mixed sampling methods involve the use of more than one technique to obtain a sample. A purposive sampling uses judgement to identify respondents who have the essential characteristics sought while snowballing is identification of subjects by referral from an original sample (Neuman, 2009). For vertically integrated players such as leather goods manufacturers who also distributed or retailed their products, the study considered the more foundational role.

Members of the Leather Articles Entrepreneurs Association (LAEA) who were mostly found in the Kariokor Market (KM) leather cluster, and the associated industry-actors in Nairobi and its environs were identified for sampling. The 2017 list of LAEA members obtained from the association was used as a primary sampling frame. A sampling frame is a record or source list for identifying individuals to be studied in a population. LAEA had a membership of fifty-eight enterprises while associated industry actors identified from Hansen *et al.* (2015) were 10, bringing a total of 68 actors in various value-system roles. According to Mugenda and Mugenda (2003), a sample can be 10 % of the study population or a minimum of 30 cases. A sample of sixty-eight respondents constituted 22% of a targeted population of 310 industry actors.

Studying the sample of a population aims to make statistical estimations of the population parameters, such as mean, to test hypotheses and to make statistical inferences that generalize information about the population studied (Kothari & Gaurav, 2014). According to LAEA, fifty-eight members were formally registered organizations operating in Nairobi and its environs. From this list, referrals were obtained for representatives of Networking Associations (LAEA and Cobblers Association officials), Industry Research and Education Institutions (KIRDI and TPCSI) and the industry Regulator (KLDC). Data was obtained from fifty-two respondents who represented the diverse leather industry value-system actors, giving a response rate of 76% of targeted population. According to Lewin and Somekh (2005), a sample size for correlational studies can be at least thirty. Appendix VI shows the list of Nairobi-based LAEA members which was the primary reference list for sampling.

3.6 Research Instrument

The most commonly used research instruments in social science research are questionnaires, interview schedules, observational forms and standardized tests (Mugenda *et al.*, 2003). A questionnaire was designed to collect quantitative data and used as interview schedule by the researcher and an assistant. Sahban, Kumar and Ramalu (2014) report using mixed techniques such as Delphi technique and triangulation in research instrument construction to measure entrepreneurial orientation.

The instrument was developed from combining those used in previous cognitive and behavioural entrepreneurship studies. Questions in this study were designed to collect quantitative data from scales of reflective perception. The questionnaire was designed by the researcher from adaptation of studies on validated research instruments. In particular for the entrepreneurial variable, questions were designed to collect data by adapting the work of Rauch *et al.* (2009), Bolton and Lane (2012) for the EO variable, and Lans *et al.* (2011) measurement of the EC variable. Fellnhofer, Puumalainen & Sjögrén (2016) developed questionnaire by adapting items from various researchers, including the individual EO scale of Bolton and Lane (2012). Narsa *et al.* (2019) applied the CEI to compare the ‘spirit’ of entrepreneurship amongst accounting (business) students, engineering (non-business) and small and medium entrepreneurs. The independent variable was measured using of thirty-six items (some with sub-items) grouped in six questions. The mediating innovation and dependent performance variables were measured using nine items each. Tables 2.1 and 2.2 summarize development of the cognitive and behavioural dimensions of entrepreneurial drive variable from various studies.

Table 3.2 in shows adaptation of items for entrepreneurial orientation from Bolton and Lane (2012). Tables 3.4, 3.5 and 3.6 summarize the adaptation of measurement items for entrepreneurial competence from Lans *et al.* (2011) for this study. Development of measurement items for the intervening innovation variable was based on types of innovation identified from literature review (Keeley *et al.,* 2013; Clauss, 2016) as outlined in Table 3.8. Development of items for the independent performance variable included financial and non-financial measures used by various scholars (Santos & Barito, 2012; Ming & Yang, 2009; Al-Ansari, 2014; Stephan *et. al.* 2015). Diverse performance indicators are used not only as assembled from literature but also to satisfy the need for uni-dimensionality, mutual exclusivity and exhaustiveness (Neuman, 2009).

Table 3.2: Adaptation of Measurement Items for of the Entrepreneurial Orientation Construct

Variable	Measurement Items for Entrepreneurial Orientation from Bolton & Lane (2012)	Adaptation of Entrepreneurial Orientation Measurement Items to this Study
Vision for Growth		I can state my industry-related business goals right away I can state my industry-related business vision in terms of: overall outcome, time period, products, context, how to measure I aim to improve my industry-related business activities in terms of: product variety, product quantity, product quality, processes I know actions to take to reach my industry activity goals
Opportunity Recognition		I know at least five sources of opportunities in my industry I know of at least five changes needed in the industry that would improve stakeholder benefits I discover improvement opportunities in my business activities all the time I have a tendency to make improvements in my business activities I know the requirements for succeeding or changing performance in my business activities I try to meet new industry requirements that satisfy buyer or consumer needs
Calculated Risk-taking	I like to take bold action by venturing into the unknown (Bolton & Lane 2012) I am willing to invest a lot of time and/or money on something that might yield a high return (Bolton & Lane 2012) I tend to act 'boldly' in situations where risk is involved (Bolton & Lane	I take bold action by venturing into the unknown I am willing to invest a lot of time and/or money on something that might yield a high return I am willing to borrow heavily in order to sustain my business activities I tend to take risks in my business activities I consider the benefits before taking risks in my business activities

Variable	Measurement Items for Entrepreneurial Orientation from Bolton & Lane (2012)	Adaptation of Entrepreneurial Orientation Measurement Items to this Study
	2012)	

Table 3.3: Adaptation of Measurement Items for Pursuing as a Dimension of the Entrepreneurial Competence Construct

Variable	Measurement Items for Pursuing by Lans *et al.* (2011)	Adaptation of Pursuing Measurement Items to this Study
Pursuing	I look for new information all the time	I search for new industry-related information all the time
	I am continuously looking for new possibilities for improvement	I am continuously looking for new possibilities to improve my business activities
		I use at least five sources of information about opportunities in my business activities
	I am often the first to try out new things	I am often the first to try out new things and ideas in my business activities
	I accept challenges more often than colleagues in my sector	I take initiative to prevent challenges from reducing benefits ahead of competing industry actors
	I am not easily diverted from the goals I set myself	I am not easily diverted from the business goals I set for myself
	I often negotiate with suppliers or buyers regarding our prices	I often negotiate with stakeholders for improvement in performance of my business
		I often negotiate with stakeholders to prevent losses in performance of my business

Table 3.4: Adaptation of Measurement Items for Networking as a Dimension of the Entrepreneurial Competence Construct

Variable	Measurement Items for Networking by Lans *et al.* (2011)	Adaptation of Networking Measurement Items to this Study
Networking	I have many networks outside the agricultural sector	I have useful links with other actors in my industry I have useful links with other actors outside my industry I often exchange industry-relevant information with other industry actors
	During my presentations I can put my ideas across easily to my audience	I share my knowledge or information on industry practices with other actors in the industry.
	I try to incorporate feedback from the public in my products	I gain knowledge or information on improving my business activities from other industry actors I share my knowledge or information on the industry practices with other industry actors
	Cooperation with entrepreneurs in my sector is important for me	I collaborate with other actors for value-addition in my industry-related business activities
	I am open to criticism from others (colleagues, employees, etc.)	Item dropped in favour of the above one on gaining knowledge to improve business activities

Table 3.5: Adaptation of Measurement Items for Creating as a Dimension of the Entrepreneurial Competence Construct

	Measurement Items for Analysing by Lans *et al.* (2011)	Adaptation of Analyzing Items to Measure as a Creating Competence for this Study
Analyzing	I keep an eye on the main issues and can point out the heart of a problem	I am able to analyze or separate the main issues in my business activities and challenges
	I know how to describe the problems in my enterprise	I know how to describe problems in my business activities
	I easily separate facts from opinions	I can easily separate facts from opinions in my business activities
	I am very aware of my own weak and strong points	Item dropped in favour of analyzing question above
	I can name my business goals straight away	Item was dropped as it is directly related to vision as an entrepreneurial orientation
	I can easily look at things from various points of view	I use ideas from different sources in developing new concepts for my business activities In making decisions about my business activities, I am able to see issues from different perspectives
	I have a clear idea of where my enterprise will be in five years	Item was dropped as it is directly related to vision as an entrepreneurial orientation.
		I come up with fresh or new ideas to address challenges in my business activities
		I synthesize / combine diverse information on solving problems in my business activities

Table 3.6: Relationship between Ten Types of Innovation, BMI Sub-construct Indicators and Innovation Measures adapted for this Research

Ten Types of Innovation by Keeley *et al.* (2013)	**BMI Sub-construct Indicators by Clauss (2016)**	**Nine Types of Innovation Applied in this Research**
	New capabilities	New capabilities: Ability to change, learn and adopt knowledge
Process innovation: use of signature or superior methods to work (building unique capabilities and function efficiency in activities and operations that produce primary offerings)	New processes	Process innovation: Changes in / new procedures for production or serving customers
Service innovation: supporting and amplifying value of offerings (delivering support value in offering quality or other performance aspect)	New technology / equipment	*Dropped in favour of process innovations*
Structure innovations: organizing and aligning talents and assets (configurations hard / tangible and soft / intangible resources in unique ways that create imitable value)		Organizational form innovation: New organizational forms, business model, link between internal activities, structures or cultures
Product / Service performance: developing distinguishing features and functions (the new or added features that give or enhance performance or value / utility in the product offerings for customers)	New offerings	Product offerings innovation: Changes in / new or improved product offering or services
Product system: creating complementary products and services (how individual products are bundled together to create a scalable configuration of valuable offerings from otherwise distinct / disparate offerings)		*Not considered. Consideration favoured product and capabilities innovation for clarity of distinction*
	New customers / markets	Customer / market innovation: Developing new customers or markets for products
Channel innovation: how to deliver offerings to users/customers (all ways that users connect to enterprise offerings)	New channels	*Dropped as an indicator in favour of customer engagement*
Customer engagement innovation: how to foster compelling interactions with users (broad and meaningful tech-based engagements that amaze user experiences)	New customer relationships	Customer relationships innovation: new ways of providing value especially continued engagement
Brand innovation: how to represent enterprise offerings and business (touch-point and promises that allows users recognize, remember and prefer offerings compared to competitors or substitutes)		
Network innovation: connecting with others to build value (building external relationships, collaborations, partnerships and affiliations that add value through supporting product offering, product development, production and/or delivery)	New partnerships	System interactions innovation: Changes in / new system configuration, relationships, partnerships or collaborations between the business and industry
Profit / value model innovations: how to create value/make money (opportunities for the business to create value for its stakeholders (especially owners and customers); what and how it generates revenue)	New revenue models	New revenue generation practices: Changes in / new administrative procedures and policies for capturing value for stakeholders
	New cost structures	New cost structures

Independent and mediating variable items in the questionnaire had several options to select from and which were rated on a Likert scale showing a continuum of intensity to which the choices applied in the business activities of the respondent. A five-point Likert type scale ranging from "Strongly Disagree" to "Strongly Agree" was used to show the extent to which respondents agreed with the measurement items. Scales arrange responses or observations on a continuum to create ordinal measures of intensity, direction, level or potency (Neuman, 2009). Likert-type scales measure levels of ability in or attitude towards an issue on a favourable-unfavourable continuum. Annual changes in the dependent performance variable was measured using +, 0 and – signs for increase, no change and decrease per item respectively.

3.7 Data Collection Procedure

Primary quantitative data on the independent, intervening and dependent variables were collected through a seven-item questionnaire (with sub-items). The questionnaire was used as a guide for one-on-one interviews with principal informants of industry actors across value-system roles in their premises and at a networking meeting held in April 2018 at KLDC offices. Quantitative data involves measurements of quantities in numerical values while qualitative data is among others, evidence in words aimed at uncovering attitudes or opinions (Neuman, 2009; Kothari & Gaurav, 2014; Mugenda *et al.*, 2003).

Questionnaires were administered by the researcher with the help of an assistant to value-system enterprise leaders as key informants. A combination of drop-and-pick plus interview methods were used so that clarifications on items could be obtained from the respondents. Interviews through face-to-face meetings, questionnaires, or a combination of these, are one popular method of data collection in exploratory and diagnostic studies. They are also advised for high response rates. Disadvantages of cost, time constraints, interviewer bias will be minimized and considered as far outweighed by the possible benefits of high rates and completeness of responses (Neuman, 2009; Bryman, 2012; Kothari & Gaurav, 2014). Conducting a structured interview overcomes the problems of an independently completed questionnaire such as literacy and incompleteness while promoting benefits of using a schedule (Kothari & Gaurav, 2014). Confidentiality was assured to the respondents and maintained in practice.

3.8 Pilot Testing

Pilot testing is used among other reasons for testing adequacy for research instruments, design and assessing the feasibility of the full-scale study (Huff, 2009). Bryman (2012) advises the use of a small set of respondents who are comparable to the members of the population under study but who should not be members of the sample employed in the full study. A pilot study was conducted in Kariokor Market, Nairobi which was not only accessible to the researcher but had a high concentration of leather industry actors. Seventeen respondents were used for pilot testing. The interviewees used in the pilot study were not used in the sample for the main research. Pilot tests are used to determine the reliability of the research instrument. Fraser, Fahlman, Arscott and Guillot (2018) elaborately discussed pilot studies and noted that their purpose is to learn the feasibility and mitigate risks of field study design, instrument efficacy and usability, data collection methods in a small-scale test. Al-Ansari (2014) evaluated validity and reliability assumptions through a research pilot test.

3.8.1 Validity of the Research Instrument

The Delphi technique was applied to the instrument using academic experts to establish face validity of the construct or ability of the instrument to measure the concepts in question (Bryman, 2012). In their research, Rauch and Frese (2007) used such a technique in their study by consulting five professors and five PhD students as experts in entrepreneurship to rate the relevance of entrepreneurship traits in their study.

Nine entrepreneurship scholars, four university lecturers with doctorate degrees and five being doctorate students were approached to assess the face validity of the research instrument and variables to be measured. Important insights gained from these expert opinions lead to refinement of the instrument. In particular the length and design, in terms of item semantics and response structure, of the questionnaire were changed to make it more user-friendly (remove jargon, remove all qualitative questions, simplify responses to quick ticks). The instrument was converted from a mixed design to collect purely quantitative data on a five-point Likert scale for the independent and mediating variable. The measures of performance were shifted to the respondent's reflective judgment of change rather than reporting of approximate or actual figures for the researcher to decipher change. For the innovation variable, more comprehensive ten types (components) based on empirically developed BMI sub-construct variables (Clauss, 2016) were adapted as outcome measures. Given the still lengthy nature of the questionnaire, the technique of using it as a guided interview was affirmed by the experts.

3.8.2 Reliability of the Research Instrument

Instrument reliability was established by collecting data from seventeen subjects from Kariokor Market but who were not included in main study. The pilot sample data was coded and analyzed using SPSS v.21. Al-Ansari (2004) applied Cronbach's alpha to measure research construct and instrument reliability, validity and internal consistency. Kraus *et al.* (2012) raised the Cronbach's alpha value to an acceptable 0.9 through restructuring of the measurement scale. Given that the instrument was adapted from previous studies and its validity triangulated in a Delphi Technique, further that pilot study sample was not for rigorous hypothesis tests, the pilot on more than ten per cent of the targeted field sample was considered adequate for lessons on instrument validity and reliability (Fraser *et al.*, 2018). Insights from the pilot tests helped refine the instructions, questions and instrument design for a full-scale study.

3.9 Data Analysis and Presentation

Data analysis is the computation of measures as indices to show patterns of relationships between data groups, estimating unknown parameters, and to test hypotheses for drawing inferences (Kothari & Gaurav, 2014). Data analysis from the main study was performed using Statistical Package for Social Science (SPSS) software version 21. Raw data needs to be processed or managed to prepare it in a form amenable to analysis and interpretation. Editing and coding, classification and tabulation are an important part of data processing as it makes the data amenable to analysis (Kothari & Gaurav, 2014). Data on the variables was coded for computer entry, cleaned for flaws, edited and tabulated for processing (Blanch *et al.*, 2006; Neuman, 2009; Bryman, 2012). The coded data was carefully entered for further transformation into indices, descriptive, exploratory and inferential analysis using SPSS v.21 software.

Likert type scale responses were coded from 1 for “Strongly Disagree” to 5 for “Strongly Agree”. An average of scores on indicator items was obtained from the Likert scale responses as an index to show the degree of the measured variable (Neuman, 2009; Kothari & Gaurav, 2014). Thus ordinal Likert responses to the indicator items were averaged to obtain a scale/rating measure for latent constructs. As shown in Table 3.3, the performance variable was coded as 1 – 5 representing “large decrease” to “large increase” in the performance area considered before transformation into a composite index. Total positive responses were added, less the negative or neutral responses to give a five-point score on each item. Totaled scores were coded on a scale of 1 – 5 where 1 represented a large decrease (-5 to -3 responses), small decrease (-2 to -1 responses), no change (for zero score), small increase (for +1 to +2 responses) and large increase (+3 to +5 responses). Items worded to measure negative proxies of desired performance (such as changes in operating expenses for business cost efficiencies, product defects for product quality, and customer complaints for stakeholder/customer satisfaction respectively) were coded in the reverse order.

An index combines information from separate measures into a single score (Neuman, 2009). Unlike finding the sum as a way of obtaining an index score, averaging also takes care of differences in reported statistics. Citing the meta-analytical research by Rauch *et al.* (2009), Kraus *et al.* (2012) find that measures of the multi-dimensional concept of entrepreneurial orientation can be indexed as one variable. Li *et al.*, (2015) applied Likert-scale on an industry-cluster relevant and self-reported assessment of the relationship between entrepreneurial networking capacity and firm performance. In their research, Barazandeh, Parvizian, Alizadeh and Khosravi (2015) reported using converting nominal scale measures (1=yes, 0=no) for entrepreneurial characteristics to numerical scales of value range 0 to 2. Lans *et al.* (2011) used the Likert-scale to measure self-reported assessment of SME owners' entrepreneurial competencies. Al-Ansari (2014) used Likert scale measures for innovativeness and business growth performance. Empirical work by Ensley *et al.* (2000), Carland, *et al.* (2002), and Armstrong & Hird (2009) involved development instruments, validation of constructs and their application in measuring cognitive traits. Development of the CEI involved use of measurement items that obtained quantitative scores and applied principal component factor analysis to validate the construct. Armstrong and Hird (2009) used self-reported measures on a polarized continuum for their Cognitive Style Index (CSI) and applied the CEI.

Table 3.7: Summary of Coding Procedures for Performance Measurement Items

Summation of Responses on Annual Changes	Designated Level of Change in Performance	Likert-scale Rating of Response
-5 to -3	Large decrease	1
-2 to -1	Small decrease	2
0	No change	3
+1 to + 2	Small increase	4
+3 to + 5	Large increase	5

Exploratory Data Analysis (EDA) was used to test the data for statistical assumptions and prepare the data for inferential analysis. EDA entailed tests of statistical assumptions such as measurement validity and reliability, normality of data distribution, linearity, lack of multi-collinearity and homoscedasticity of the variables. Descriptive statistics as a form of exploratory data analysis was used to assure the soundness of measurement, coding procedures and compounding indices by showing frequencies, that data is linear, means, skewness, standard deviations and any outliers are not beyond the expected range (Garson & Statistical Associates Publishing (SAP), 2012). Descriptive analysis was used to show frequencies of responses obtained and computation of correlation coefficients between the variables. Composite indices were used to show the entrepreneurial drive, innovation and performance characteristics of leather industry value-system actors.

Exploratory Factor Analysis (EFA) was used to establish the discriminant and convergent validity of the constructs used, before inferential analysis was performed (Costello & Osborne, 2005; Yong & Pearce, 2013). Factor analysis is a systematic method of constructing indices by assessing the contribution of each underlying dimension to each index. Principal Axis Factor analysis (PAF) and Principal Component Analysis (PCA) are closely related methods of computing factor analysis (Leech, Barret and Morgan, 2005). Item factor loadings of 0.5 or greater and inter-item cross-loadings of less than 0.310 are considered significant. Yong & Pearce (2013) give the KMO threshold for determining suitability of data for factor analysis as 0.5.

In an exploratory study, Hoque, Siddiqui, Awang and Baharu (2018) used previous theoretical literature to develop and validate the dimensionality of a measurement scale of entrepreneurial orientation in the context of Bangladeshi SME's (KMO=0.814, Barlett's Test of Sphericity p-value=0.000). They cited the general acceptance KMO value as being above 0.6 and Barlett's test with required significance of less than 0.05 to show data to be adequate for factor analysis. Man, Lau and Snape (2008) conducted the spectrum of expert opinion, EFA, correlational analysis, and hypotheses testing to develop and empirical model comprising the relationship between a construct of entrepreneurial competence and SME performance in a given competitive context. The operationalization of their entrepreneurial competencies measures shows many parallels with this study's dimensions and measurement items of entrepreneurial drive variable.

3.10 Tests of Hypotheses

Conceptual linear regression models showing the link between the variables as shown in the conceptual framework were used for inferential analysis. Inferential analysis involved hypotheses tests of significance and test of mediation for generalization to the population. Where parametric assumptions of multivariate normality are violated, resampling can be used as an appropriate method for significance testing (Garson & Statistical Associates Publishing (SAP), 2012).

Graphical methods were used to show linearity and distribution. Visual inspection of scatterplots for linearity for the independent variable were used. For the linearity assumption to be upheld, the scatter plots should not show a curvilinear relationship between the independent and dependent variable (Fanzco & Farmer, 2014). Assumption of normality was tested using the Shapiro-Wilks test that gives the significance of the probability that the data follows normal distribution (Shapiro & Wilk, 1965).

Further, the linearity assumption was tested using the ANOVA F-test which showed the 'goodness of fit' of the variables in the linear model. As a rule of thumb, the overall coefficients obtained should not be very low, otherwise important variables may have been omitted in the model (Garson & Statistical

Associates Publishing (SAP), 2012). Coefficient of determination (adjusted R, or R^2) was obtained to show the extent to which the independent variable determines the intervening and dependent variables, or the percentage of variation not attributable to the measured variable as opposed to unknown factors (Blanche *et al.*, 2006). The coefficient of multiple correlation obtained was applied to a linear regression model to show the relationship between the independent, mediating and dependent variables. Ngugi *et al.* (2013) applied regression analysis to show that employee innovativeness has a significant influence on growth of SMEs in Kenya.

Multicollinearity problem arises when there is a high, and therefore unacceptable, degree of correlation between the independent variables, implying that they are not independent and require to be combined into an appropriate composite independent variable. Multicollinearity should be reduced to a minimum by restructuring the independent variables (Garson & Statistical Associates Publishing (SAP), 2012; Kothari & Gaurav, 2014). Assumption of lack of multi-collinearity was tested using the Variance Inflation Factor (VIF) test. VIF, as a reciprocal of the tolerance values ($1 - R^2$) of a given independent variable, indicates high multi-collinearity. A VIF cut-off of 5 was applied as it shows multi-collinearity among the independent variables is a problem (Garson & Statistical Associates Publishing (SAP), 2012).

Homoscedasticity assumption is the supposition that variances of the dependent variable are equal regardless of the value of the independent variable. Assumption of homoscedasticity is that the dependent variable has a common variance for every value of the independent variable. Homoscedasticity of the dependent variable for all independent and mediating variables was tested using Breusch-Pagan and Koenker test to estimate heteroscedasticity. Breusch-Pagan and

Koenker tests the null hypothesis that the variances of the error terms are constant. The test rejects the null hypothesis when the significant value is less than 5% (McDonald, 2014).

For the main independent variables, the latent root (eigenvalue) was calculated to show the relative importance of each in accounting for measurement. According to the Kaiser criterion, factors with an *eigenvalue* of one or greater from the PCA will be retained as the independent or explanatory variable (Sapsford, 2007; Kothari & Gaurav, 2014). Kraus *et al.* (2012) applied EFA using Principal Axis Factor analysis (PAF) with Varimax rotation to gauge the multi-dimensionality and validity of entrepreneurial orientation and entrepreneurial competence constructs. Barazandeh *et al.* (2015) used Cronbach's alpha threshold above 0.6 and factor loadings above 0.40 to determine reliability and discriminant validity respectively

Correlation coefficients of the composite indices were obtained using regression analysis for development of a linear regression model. Regression determines the statistical relationship between two variables. Correlation coefficients were calculated using ANOVA to establish the relationship between entrepreneurial drive variables and the mediating and dependent variables (Kothari & Gaurav, 2014).

Inferential analysis was applied to make conclusions on the population from the sample statistics including tests of significance to confirm or refute the validity of the postulated hypotheses (Blanche *et al.*, 2006; Neuman, 2009; Kothari & Gaurav, 2014). Inferential analysis makes assumptions of normal data distribution, instrument reliability and construct validity. Tests of statistical significance were used to estimate how confident the results of obtained from a randomly selected sample are generalizable to the population from which it is drawn (Bryman, 2012). The *t*-test were applied to find whether the correlations between independent variable and the mediating and dependent variables respectively are significant in showing the (regression) relationship between variables in the population.

Given βx as regression coefficients associated with the variables in the regression model, the Null Hypotheses were represented by H_0: $\beta x < 0$, while the alternative hypothesis was represented by H_a: $\beta x > 0$ and used to test the significance of the correlation coefficients in the linear regression models. The two-tailed test was applicable (Mugenda, 2008; Kothari & Gaurav, 2014) at significance level of 5%, (95% confidence level). Diverse hypotheses testing tools are commonly applied by different scholars to show the entrepreneurship-performance linkage (Shir *et al.*, 2014; Kraus *et al.* 2012) The assumed general linear regression model to test the relationship between the independent entrepreneurial drive variables, the mediating innovation variable and the dependent performance variable, was thus:

$$Y = \beta_0 + \beta_x X + \beta_{x1} M + \varepsilon$$

where,

Y = dependent variable (Value-system Actor's performance),

β_0 = a constant or y-intercept,

β_x = coefficient of correlation for independent variable X,

β_{x1} = coefficient of correlation for the mediating variable M

X = independent variables: vision for growth, opportunity recognition, calculated risk-taking, pursuing, networking or creating

M = mediating innovation variable

ε = error term.

Mediation by the innovation variable was assessed through four sequential steps of testing for mediation (Kenny, 2016): the causal effect on the entrepreneurial drive (independent) variable and on the performance (dependent) variable; the regression of the independent variable on the innovation (mediating) variable; the regression effect of mediator variable on the dependent variable with the independent variable controlled; test for significance of the effect of independent and mediating variables on the dependent variable. Satisfaction of all four steps confirms partial mediation, while satisfaction of the first three steps and not the fourth confirms complete mediation. The Sobel Test and bootstrapping methods were used to confirm mediation.

Misspecification of the model was avoided through good literature review that identifies distinct and empirically validated variables whose direction of relationship was clear. Firm assumptions about causal relationships between the variables were made based on review of theoretical and empirical literature for further analysis of the regression model. Theoretical and empirical studies show acceptance of time-based causal relationship between entrepreneurial characteristics with innovation and firm performance (Al-Ansari, 2014; Acs *et al.*, 2015; Dinh & Clarke, 2012; Audretsch *et al.*, 2012; Ndubisi & Iftikhar, 2012; Kraus *et al*., 2012; Kreiser *et al*., 2012) and performance as outcomes (Lumkin & Dess, 1996; Zahra & Covin, 1995; Wilkund & Shepherd, 2003 and 2005; Wang, 2008; Arbaugh *et al.* 2009; Rauch *et al.*, 2009; Jain, 2011; Sanchez, 2012; Al-Ansari, 2014; Guo *et al.*, 2016).

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents results of analysis data the study, their interpretation and findings. The study explored the influence of entrepreneurial drive on performance of a representative sample of the leather industry in Kenya, assuming a causal relationship between the two variables and a mediating effect of innovation. The study measured the variables using Likert-scale items as responded to by representatives of value-system actors in the sample from Nairobi and its environs. Statistical Package for Social Sciences (SPSS) version 21 was used to analyze the data. Tests showed good instrument reliability and validity. Information on respondent demographics, descriptive, exploratory and inferential analysis are provided. Key findings on the specific study objectives and their respective tests of hypotheses are presented. The findings are compared previous relevant studies and implications discussed.

4.2 Response Rate

Table 4.1 shows the response rate of the targeted population was seventy-six percent. The response rate was achieved through persistence at seeking interview opportunities. The non-response bias was therefore only twenty-four percent 24%. Citing Johnson and Christensen, Mertens (2014) observed that a response rate of seventy percent has been generally recommended as acceptable. A few missing responses were found randomly in five questionnaires. This may have been due to the perceived confidentiality of data, lack of understanding or reluctant attitude of the respondents to answer a question that they thought was irrelevant to their business operations and practices. A maximum likelihood function was used to replace those missing values (Enders & Bandalos, 2001).

Table 4.1: Response Rate

Response Rate	Frequency	Percentage
Response	52	76%
Non –response	16	24%
Total	68	100%

4.3 Pilot Study Results

A pilot study is advised before conducting a survey to test functionality of the research questions and entire instrument (Bryman, 2012). The pilot study was conducted in Kariokor Market, Nairobi which was not only accessible to the researcher but had a high concentration of leather industry actors in a cluster that is representative of Kenya's leather industry (Hansen *et al.*, 2015). The interviewees used in the pilot study were not used in the sample for the main research. The pilot study of leather industry cluster at Kariokor Market showed the instrument to be reliable on all variables used. Based on experience from the piloting, minimal changes were made to improve the syntax and order of questions for ensure clarity to the respondents. Al-Ansari (2014) evaluated validity and reliability assumptions through a research pilot test.

4.3.1 Reliability Results

The research instrument showed acceptable reliability, with overall scores ranging from 0.700 to 0.919 for entrepreneurial drive constructs, 0.761 and 0.717 for the innovation and performance constructs respectively (n=17). All items were therefore retained for data collection. Results of the instrument reliability tests are presented in Tables 4.2, 4.3 and 4.4. The Cronbach test was repeated using the main study data and results showed that the instrument and all its measurement items continued to be highly reliable. A Cronbach's alpha coefficient of at least 0.7 and above was considered acceptable reliability for the items in the instrument, implying the measurement items could be considered uni-dimensional for confirmatory purposes (Garson & Statistical Associates Publishing (SAP), 2012). The data was thus found acceptable for further analysis. Entrepreneurship researchers Al-Ansari (2014) (*n*=24 respondents) and Su, Xie and Li (2011) (*n*=15 respondents) conducted pilot studies on representative groups of the target population to establish instrument reliability and used outcomes to refine the research instrument.

Table 4.2: Reliability Results for Entrepreneurial Drive Construct

Construct	Items	Cronbach's Alpha if Item Deleted	Overall Cronbach's Alpha	Comment
Vision for Growth	Having Goals for the Business	0.640	0.739	Reliable
	Knowing a Clear Vision	0.603		
	Knowing Actions to Achieve Goals	0.869		
	Having Goals for Improvement	0.622		
Opportunity Recognition	Alertness to Opportunities	0.772	0.772	Reliable
	Opportunity Knowledge	0.763		
	Opportunity Discovery	0.726		
	Tendency to Improve	0.719		
	Knowledge of Opportunities for Success in Industry	0.789		
	Knowledge of Industry	0.689		
Calculated Risk taking	Affinity for Bold Action	0.550	0.700	Reliable
	Willingness to Invest	0.730		
	Willingness to Borrow	0.529		
	Tendency to Take Risks	0.653		
	Considering Costs vs. Benefits	0.727		
Pursuing	Searching Information	0.638	0.701	Reliable
	Pursuing Opportunities for Improvement	0.658		
	Use of Information Sources	0.658		
	Trying New Ideas	0.646		
	Proactive Competing	0.705		
	Focused Pursuit of Goals	0.670		
	Pursuing Performance Improvement	0.711		
	Preventing Loss of Benefits	0.595		
Networking	Establishing Information Links Within Industry	0.844	0.919	Reliable
	Establishing Information Links Outside Industry	0.888		
	Exchanging Industry Information	0.954		
	Gaining Knowledge	0.889		
	Sharing Knowledge	0.906		
	Collaborating on Improvements	0.890		
Creating	Analyzing Challenges	0.605	0.753	Reliable
	Describing Challenges	0.694		
	Separating Facts	0.627		
	Use Different Sources for New Concepts	0.871		
	Adopting Different Perspectives	0.752		
	Developing New Ideas	0.724		
	Synthesizing Information	0.747		

`Table 4.3: Reliability Results for Innovation Construct

Construct	Items	Cronbach's Alpha if Item Deleted	Overall Cronbach's Alpha	Comment
Innovation	New Product Innovations Introduced	0.752	0.761	Reliable
	New Process Innovations Introduced	0.752		
	New Organizational Forms or Structures Introduced	0.706		
	New Capabilities Introduced	0.713		
	New Customers or Markets Introduced	0.789		
	New Customer Engagements Introduced	0.746		
	New System Interactions or Partnerships Introduced	0.724		
	New Revenue Generation Practices Introduced	0.743		
	New Cost Structures Introduced	0.697		

Table 4.4: Reliability Results for Performance Construct

Construct	Items	Cronbach's Alpha if Item Deleted	Overall Cronbach's Alpha	Comment
Performance	Change in Net Profit	0.604	0.717	Reliable
	Change in Sales Turn-over	0.697		
	Change in Market Share	0.617		
	Change in Production Quantities	0.611		
	Change in Productivity	0.656		
	Change in Product Variety	0.619		
	Change in Operating Expenses	0.851		
	Change in Product Defects	0.764		
	Change in Customer Complaints	0.645		

4.4 Demographic Information

The demographics regarding respondents/ gender, Age of Respondent, Age of Business, Number of Workers, Total Business Assets, Average Annual Turnover, Respondent Role in Venture and Venture Role in Industry was analyzed descriptively and presented in tables. Demographic information was compared with national economic data in Micro, Small and Medium Enterprises. Leather industry characteristics reported from the sample was comparative to data from previous studies with the exception of gender and age profiles.

4.4.1 Gender of the Respondents

As presented in Table 4.5, the study established that seventy-three percent of the respondent were male and 26.9% were female. A survey of Micro, Small and Medium Enterprises (MSME's) across all industries in Kenya showed Employment by gender had about equal participation of males and females (KNBS, 2016). The results obtained in this research indicate that male participation in Kenya's leather industry SME's is much higher than the national average.

Table 4.5: Gender of the Respondents

Gender of Respondents		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	38	73.1	73.1	73.1
	Female	14	26.9	26.9	100.0
	Total	52	100.0	100.0	

4.4.2 Age of the Respondents

The findings on age levels show that thirty-three percent of the respondents were above 50 years, about 11.5% were of ages 46-50 years, 9.6% were of ages 41-45 years, 23.1% were of ages 36-40 years, 11.5% of the respondents were of ages between 31-35 years and 11.5% were between the ages 25-30 years as indicated in Table 4.6. Therefore, the sample used in this study had close to half the population (46.2%) aged 40 years and below. MSME's have more than three-quarters of those above 18 years are in paid employment in Kenya where 82% of the employed are youth between 15 and 35 years of age (KNBS, 2018). Noteworthy was that the age-group between 41-50 years being only 21.1% while the age-group above 50 years was 32%. Given that this study also considered networking as a variable in entrepreneurial drive and performance, then the opportunity to create networks across age and experience groups that transfer industry information, tacit and historical knowledge cannot be gainsaid.

Table 4.6: Age of the Respondents

Age of the Respondents		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25 - 30 Years	6	11.5	11.5	11.5
	31 - 35 Years	6	11.5	11.5	23.1
	36 - 40 Years	12	23.1	23.1	46.2
	41 - 45 Years	5	9.6	9.6	55.8
	46 - 50 Years	6	11.5	11.5	67.3
	Above 50 Years	17	32.7	32.7	100.0
	Total	52	100.0	100.0	

4.4.3 Age of the Business

Table 4.7 presents findings on age of the businesses the respondents worked in. Forty-two percent of the business were in operation for a period of above 10 years. Thirty-nine percent were in operation for a period between 5-10 years and 19.2% of the businesses were in existence for a period below 5 years. As the age of businesses mature, they tend to move from micro-enterprises to small enterprises and eventually become medium enterprises, at the same time employing more people (KNBS, 2016). With more than half of the enterprises having a longevity of above five years, and close to half of them being 10 years and above, this meant that there is stability in the leather industry in Kenya.

Table 4.7: Age of the Business

Age of the Business		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5 Years	10	19.2	19.2	19.2
	5 - 10 Years	20	38.5	38.5	57.7
	Above 10 Years	22	42.3	42.3	100.0
	Total	52	100.0	100.0	

4.4.4 Number of Workers

The respondents were also asked to provide information on the number of employees in the organization as indicated in Figure 4.1, 55.8 % of the firms had employed less than 10 workers, 36.5% of the organizations had between 10-49 workers and 7.7% of the firms had employed more than 50 workers. The Kenyan Micro and Small Enterprises Act of 2012 (RoK, 2012) identifies businesses with micro-enterprises as those employing less than ten people; small enterprises as those with employing between ten and 50 people. Medium enterprises are those with 50 to 99 employees (KNBS, 2016). Businesses with larger employment or turnover would therefore be regarded as large enterprises. All the businesses studied were in the micro, small and medium classification. The majority 55.8% of the respondents' businesses had less than ten employees and therefore could be classified as micro-enterprises. MSME's provide the highest employment opportunity in Kenya, standing at 14.9M in 2015 in a country where only 17.9M (71.6%) are employed (KNBS, 2016; KNBS, 2018).

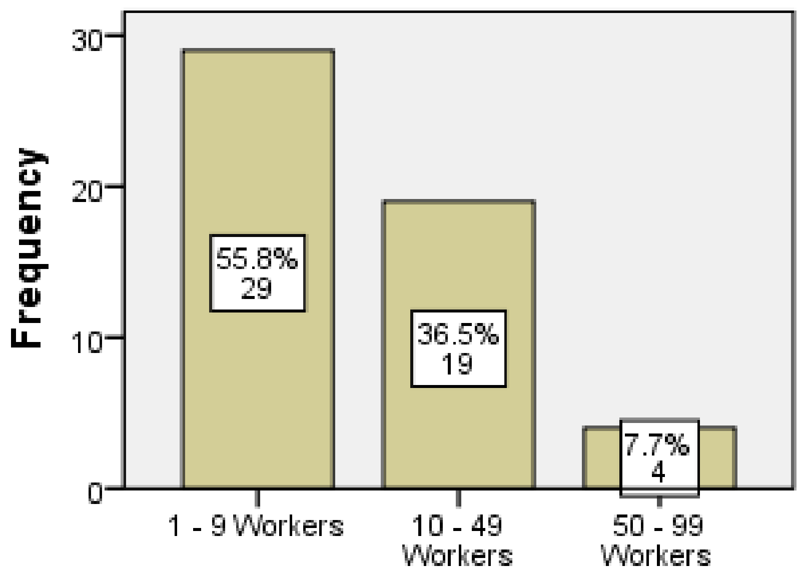


Figure 4.1: Number of Workers

4.4.5 Total Business Assets

In terms of business asset, Table 4.8 indicates that 40.4% of the firms had assets valued below 1 million. 26.9% owned assets worth 1 -5 million and 32.7 firms owned assets valued above KShs.5 million. The Kenyan Micro and Small Enterprises Act of 2012 (RoK, 2012) classifies businesses according to employment levels, turnover and asset base. It identifies businesses micro-enterprises (less than ten employees), small enterprises as (10 to 50 people) or medium enterprises (50 to 99 employees) or with asset bases as the Cabinet Secretary in charge may determine from time to time.

Table 4.8: Total Business Assets

Total Business Assets		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 1 Million	21	40.4	40.4	40.4
	1 - 5 Million	14	26.9	26.9	67.3
	Above 5 Million	17	32.7	32.7	100.0
	Total	52	100.0	100.0	

4.4.6 Average Turnover

In terms of annual turnover, Figure 4.2 indicates that 28.8% of the organizations generated a turnover of less than KShs.500,000, 38.5% generated sales of between KShs. 500,000 to KShs. 5 million and 32.7% of firms generated turnover of over KShs.5 million. The Kenyan Micro and Small Enterprises Act of 2012 (RoK, 2012) identifies businesses with micro-enterprises as those with a turnover of up to Ksh. 500,000; small enterprises as those with with a turnover between Ksh. 500,000 to Ksh. 5 million. By virtue of turnover, up to 67.3 % of the respondents, businesses could be considered micro and small enterprises.

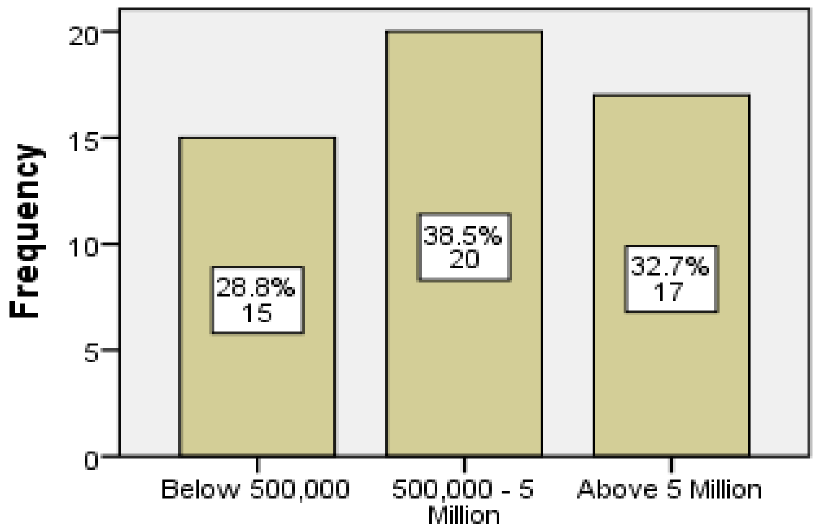


Figure 4.2: Average Annual Turnover

4.4.7 Respondent Role in Venture

The results presented in Figure 4.3 indicate that majority of the respondents at 73.1% identified themselves as owners / owner managers of the business, 9.6% were strategic level managers, 9.6% were line managers and 7.7% were chief executive officers. These results were consistent with a survey of MSME establishments in Kenya showing that 78.9% were owned by sole proprietors (KNBS, 2016).

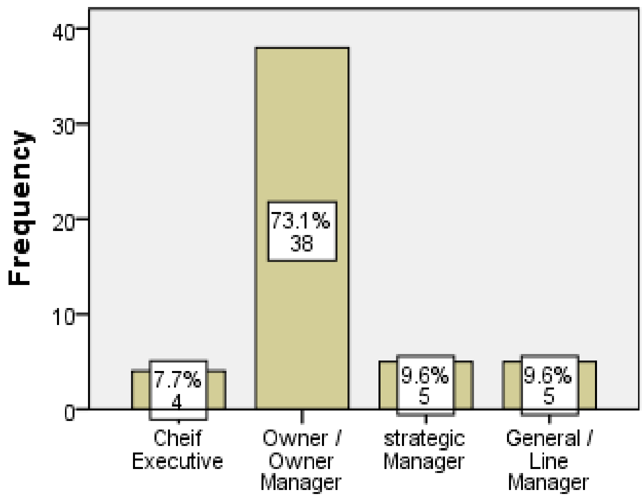


Figure 4.3: Respondent Role in Venture

4.4.8 Venture Role in Industry

The results presented in Table 4.9 indicate that thirty-four respondents' firms were in leather processing, representing 65.3% of those studied. Ten (19.2 %) were in delivery, 3 (5.8%) were producers, 2 (3.8%) were industry networking associations, 2 (3.8%) in research and one (1.9%) was in industry regulation. Venture role in the industry is an indication of the businesses' value-system role. Michael Porter (1985) introduced the concept of the value-system as a network of network organizations involved in the production and delivery of an offering to the end customer, or an interconnected system of value chains in a supply chain. High number of leather processing ventures is consistent with the observation that upstream sector of leather finishing and production of leather articles is labour-intensive (ITC, 2011), thus it would be expected to attract more players.

Due to the few number of respondents in some of the industry value-system actors such as producers, regulator, industry networking support, and to some extent, research support roles, the study could not analyze data at this level. By having 65.3% of respondents, the processor level, comprising leather articles (shoes, bags, belts, wallets, sandals, etc. manufacturers), this value-system role contributed more to the findings and therefore inferences and conclusions could also be more attributable to them.

Table 4.9: Distribution of Respondents across Value-system Roles

Respondent Value-system Role	**Number of Respondents**	**Percent**	**Participants**
Producer	3	5.8%	Tanners in Ruai and Sagana
Delivery Agents	10	19.2%	MSE's in Nairobi and Thika being suppliers of leather to manufacturers (primary) and some retailers of shoes (secondary)
Processing	34	65.3%	Leather article manufacturers in Nairobi, Kariokor Market, Ngara and Thika
Industry Networking Support / Association	2	3.8%	LAEA and Cobblers Association officials
Policy and Regulatory Support	1	1.9%	KLDC
Research Support	2	3.8%	KIRDI, TPCSI

The study therefore focused on reporting findings, drawing inferences and discussing the results, and making conclusions on the entire (eco)-system- or industry-level where the various system-actor roles were considered collectively despite being a heterogeneous sample. The importance of this level of analysis is inspired by industry-level economics studied by Micheal Porter's 1985 seminal studies and emphasized by growing interest in business and entrepreneurial ecosystem studies such as by Cohen (2005), Audretsch (2007), Adhikari (2013), Chatterji *et. al.* (2013) and Li *et al.* (2015).

4.5 Descriptive Statistics for the Study Variables

The Entrepreneurial Drive construct was conceptualized in line with prior empirical studies with some modification in line with theoretical literature from fields of entrepreneurship and strategy to apply to the context of the study. Robinson and Herron (2001) observe that the study of entrepreneurship have borrowed from the field of strategy and industry structure to explain and link entrepreneurial attributes to venture performance. To decide whether indicators should be modeled depended on three considerations namely theory/substantive knowledge, research objective and empirical conditions (Chin, 1998). Entrepreneurial Drive was measured using thirty-six items deduced from literature. Thus, entrepreneurial drive was a composite scale comprising six first-order latent variables namely, Vision for Growth, Opportunity Recognition and Calculated Risk-taking, Pursuing, Networking and Creating. Each scale was rated on a five-point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Average scores for each first-order variable was obtained from respondents’ rating of indicator measurement items. Each sub-scale was reviewed for reliability and validity prior to regression analysis and found suitable.

Covin and Wales (2012) assert that as a latent construct, researchers can choose whichever uni-dimensional or multi-dimensional measurement approaches that best serves their purposes. Using an examination of the entrepreneurial orientation dimension in entrepreneurship literature, Covin and Wales (2012) aver that latent variables may be constructed from formative (causal) or reflective (effect) measurement models as may be desirable. The measurement models used were reflective rather than formative. Further, findings and conclusions on the study variables were analyzed and made at firm-level rather than value-system actors’ role-level or industry-level. This was due to the limited number of respondents available at some of the value-system actor levels such as producers (9.6%), regulators (1.9%) and research (1.9%).

4.5.1 Vision for Growth

Each measurement item for this variable was rated on a five-point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Ratings for the four indicator items used in this variable were average to obtain an overall Vision for Growth score. Sub-indicators for two indicator items, namely Clarity of Vision (VClarity) and Vision for Improvement (Vimprovement), were similarly measured and averaged. Average scale ratings ranged from 4.13 to 4.29. This indicated that the respondents believed that they exhibited high levels of Vision for Growth in their firms. The highest mean rating was 4.13 for the statement “having goals for business” (SD= 0.536, n=52). The statement with the lowest mean rating of 4.29 was “knowing a clear vision” (SD= 1.103, n=52). The average scale total was 4.22 (SD =0.747) which was a high rating indicating that on average, the respondents’ assessed that they had had high levels of Vision for Growth for their enterprises. Respondent ratings on vision for growth are presented in Table 4.10. Kantabutra *et al.* (2010) study, itself affirming earlier studies by Baum and colleagues, states the importance of having a vision statement with characteristics and content such as future orientation, clarity and challenge – in this case growth – in determining performance. Mohammed, Ibrahim and Shah (2017) found that strategic competency (which was described in terms of identifying, setting and acting on long-term goals) of Nigerian women micro-entrepreneurs had a direct positive and significance effect on firm performance (β = 0.227, t = 3.411, p<0.01).

Table 4.10: Vision for Growth

Description	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
Having Goals for the Business	6	2	13	31	48	4.13	1.103
Knowing a Clear Vision	0	0	4	63	33	4.29	.536
Knowing vision in terms of outcome	2	0	15	40	42	4.21	.848
Knowing vision in terms of time period	2	4	15	42	37	4.08	.926
Knowing vision in terms of products	4	0	4	46	46	4.31	.875
Knowing vision in terms of context	2	4	8	50	37	4.15	.872
Knowing vision in terms of how to measure	2	6	10	54	29	4.02	.896
Having Goals for Improvement	4	2	6	40	48	4.27	.952
Having Goals for Improvement in product variety	2	0	8	37	54	4.40	.799
Having Goals for Improvement in product quantity	2	0	8	37	54	4.40	.799
Having Goals for Improvement in product quality	2	0	6	37	56	4.44	.777
Having Goals for Improvement in business processes	0	0	8	31	62	4.54	.641
Knowing Actions to Achieve Goals	5.8	1.9	5.8	40.4	46.2	4.19	1.049
Vision for Growth						4.22	.747

4.5.2 Opportunity Recognition

The Opportunity Recognition scale consisted of four items. Each item was rated on a five point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Average scale ratings ranged from 4.00 to 4.37. This indicated that the respondents believed that they exhibited high levels of Opportunity Recognition. The highest mean rating was 4.37 for the statement “Knowledge of Industry” (SD= 0.687, n=52). The statement with the lowest mean rating of 4.00 was “Opportunity Knowledge” (SD= 0.970, n=52). The average scale total was 4.13 (SD =0.568) which was a high rating indicating that on average, the respondents had high levels of Opportunity Recognition. Table 4.11 shows the respondents’ rating of their opportunity recognition. Santos, Caetano, Baron and Curral (2015) showed that there are cognitive frameworks used by individuals to recognize business opportunities thus offering an explanation for business success. Baron and Ensley (2006) aver that opportunity recognition is a cognitive process of recognizing patterns allowing identification of new business opportunities. Ming and Yang (2009) showed that firms with high opportunity recognition had higher innovative capability than passive, proactive or creative firms.

Table 4.11: Opportunity Recognition

Description	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
Alertness to Opportunities	2	10	6	50	33	4.02	.980
Opportunity Knowledge	4	4	12	50	31	4.00	.970
Opportunity Discovery	0	4	19	44	33	4.06	.826
Tendency to Improve	0	0	12	54	35	4.23	.645
Knowledge of Opportunities for Success in Industry	0	2	8	67	23	4.12	.615
Knowledge of Industry	0	0	12	40	48	4.37	.687
Opportunity Recognition						4.13	.568

4.5.3 Calculated Risk-taking

The Calculated Risk-taking scale consisted of five items. Each scale was rated on a five point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Average scale ratings ranged from 2.94 to 4.12 as shown in Table 4.12. This indicated that the respondents believed that they exhibited high levels of Calculated Risk-taking. The highest mean rating was 4.12 for the statement “Willingness to Invest” (SD= 0.983, n=52). The statement with the lowest mean rating of 2.94 was “Willingness to Borrow” (SD=1.178, n=52). The average scale total was 3.6 (SD =1.070.) which was above average indicating that on average, the respondents had high levels of Calculated Risk-taking. Sahban *et al.* (2014) used such indicators of risk-taking as making decisive and risky action, making decision in uncertainty/venturing into the unknown/proclivity for high risk, and borrowing heavily to which parallels can be drawn with this study’s indicators of Affinity for Bold Action, Tendency to Take Risks and Willingness to Borrow respectively. Sahban *et al.* (2014) used a mixed method research to develop and EO instrument that showed that these indicators had a high reliability and validity. Wang and Poutziouris (2010) found that risk-taking intensity positively correlates with business sales performance in UK family firms. Family firms tend to take calculated and moderate risks where authority, and therefore entrepreneurial decision making, is usually dominated by a single-family owner-manager. Amongst the study variables, Calculated Risk-taking had the lowest mean score of 3.6.

Table 4.12: Calculated Risk-taking

Description	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	Std. Deviation
Affinity for Bold Action	12	10	21	44	13	3.38	1.191
Willingness to Invest	2	4	19	31	44	4.12	.983
Willingness to Borrow	8	37	21	23	12	2.94	1.178
Tendency to Take Risks	4	15	23	38	19	3.54	1.093
Considering Costs vs. Benefits	0	8	13	42	37	4.08	.904
Calculated Risk-taking						3.6	1.070

4.5.4 Networking

The networking scale consisted of six items. Each scale was rated on a five point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Average scale ratings ranged from 3.96 to 4.17 as shown in Table 4.13. This indicated that the respondents believed that their firms did exhibit high levels of networking. The highest mean rating was 4.17 for the statement “Gaining Knowledge” (SD= 0.678, n=52). The statement with the lowest mean rating of 3.96 was “Establishing Information Links outside Industry” (SD= 0.885, n=52). The average scale total was 4.04 (SD

=0.657) which was a high rating indicating that on average, the respondent firms had high levels of networking, especially within the industry. Networks provide access to resources such as financial capital, information, potential employees but also emotional encouragement (Welter, 2010). Li *et al.* (2015) assert that external and localized cluster networks determine firm market performance because of shared resources. One of the resources identified in the resource-based view (RBV) of the firm is knowledge. In the case of this study, gaining knowledge – a key resource from the resource-based view (RBV) theory of the firm – is important in determining performance. Baron (Santos *et al.,* 2015) emphasizes the importance of accumulation of knowledge and diverse experience in furthering the ability to recognize opportunities as patterns in an objective external world. Li *et al.* (2015) further suggest that networking interactions are important as contextual aspects of entrepreneurial ecosystem performance.

Table 4.13: Networking

Description	**Strongly Disagree (%)**	**Disagree (%)**	**Neutral (%)**	**Agree (%)**	**Strongly agree (%)**	**Mean**	**Std. Deviation**
Establishing Information Links Within Industry	0	8	15	40	37	4.06	.916
Establishing Information Links Outside Industry	2	4	17	50	27	3.96	.885
Exchanging Industry Information	0	6	10	58	27	4.06	.777
Gaining Knowledge	0	2	10	58	31	4.17	.678
Sharing Knowledge	4	2	10	62	23	3.98	.874
Collaborating on Improvements	2	4	12	54	29	4.04	.862
Networking						4.04	.657

4.5.5 Pursuing

The Pursuing scale consisted of eight items. Each scale was rated on a five point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Average scale ratings ranged from 3.67 to 4.38 as shown in Table 4.14. This indicated that the respondents believed that their firms did exhibit high levels of Pursuing. The highest mean rating was 4.38 for the statement “Opportunities for Improvement” (SD= 0.745, n=52). The statement with the lowest mean rating of 3.67 was “Proactive Competing” (SD= 0.923, n=52). The average scale total was 3.95 (SD =0.489) which was a high rating indicating that on average, the respondent firms had high levels of pursuing.

In discussing opportunity recognition as pattern recognition, Baron in 2006 (Santos *et al.*, 2015) concludes that entrepreneurs can learn to search actively for opportunities and focus their efforts “in the best places and in the best ways”, especially in factors that determine business success such as identifying changes in technology, demographics and markets. In addition to highlighting the fundamental nature of opportunity recognition (as “start of a journey”), Baron inevitably distinguishes between the cognitive “alertness” from “active searching”. This study considers the first as a psychological disposition (orientation) and the latter a behavioural (competence) entrepreneurial traits respectively. Sahban *et al.* (2014) used such indicators of pro-activeness as seeking new opportunities, tendency to lead/first using the new product, anticipating problems to which parallels can be drawn with this study’s indicators of searching for information/pursuing opportunities for improvement, proactive competing/trying new ideas and preventing loss of benefits respectively. Sahban *et al.* (2014) used a mixed method research to develop and EO instrument that showed their six indicators of pro-activeness had a high reliability and validity.

Table 4.14: Pursuing

Description	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
Searching Information	0	0	15	48	37	4.21	.696
Pursuing Opportunities for Improvement	0	4	4	42	50	4.38	.745
Use of Information Sources	2	6	23	44	25	3.85	.937
Trying New Ideas	0	12	25	46	17	3.69	.897
Proactive Competing	2	10	23	50	15	3.67	.923
Focused Pursuit of Goals	0	6	15	54	25	3.98	.804
Pursuing Performance Improvement	4	2	6	60	29	4.08	.882
Preventing Loss of Benefits	6	2	17	60	15	3.77	.942
Pursuing						3.95	.489

4.5.6 Creating

The Creating scale consisted of seven items. Each scale was rated on a five point Likert type scale ranging from 1 for “Strongly Disagree” to 5 denoting “Strongly agree”. Average scale ratings ranged from 4.10 to 4.27 as shown in Table 4.15. This indicated that the respondents believed that their firms did exhibit high levels of networking. The highest mean rating was 4.27 for the statement “Describing Challenges” (SD= 0.598, n=52). The statement with the lowest mean rating of 4.10 was “Synthesizing

Information" (SD= 0.721, n=52). The average scale total was 4.20 (SD =0.532) which was a high rating indicating that on average, the respondent firms had high levels of Creating. Although not discussed as a construct in entrepreneurship literature, Bjerke (2007) Kuratko (2014) and other scholars acknowledge the role of creating in innovation. Schumpeter presented entrepreneurial innovation as 'creative destruction'.

Table 4.15: Creating

Description	Strongly disagree	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
Analyzing Challenges	0	2	12	58	29	4.13	.687
Describing Challenges	0	2	2	63	33	4.27	.598
Separating Facts	0	4	2	63	31	4.21	.667
Use Different Sources for New Concepts	0	0	13	50	37	4.23	.675
Adopting Different Perspectives	0	2	13	46	38	4.21	.750
Developing New Ideas	0	2	8	58	33	4.21	.667
Synthesizing Information	0	2	15	54	29	4.10	.721
Creating						4.20	.532

4.5.7 Innovation

The innovation scale consisted of nine items. Each scale was rated on a five point Likert type scale ranging from 1 for "Strongly Disagree" to 5 denoting "Strongly agree". Average scale ratings ranged from 3.81 to 4.42 as shown in Table 4.16. This indicated that the respondents believed that they exhibited high levels of innovation. The highest mean rating was 4.42 for the statement "New Customers or Markets Introduced" (SD=0.971, n=52). The statement with the lowest mean rating of 3.81 was "New System

Interactions or Partnerships Introduced" (SD= 1.017, n=52). The average scale total was 4.10 (SD =0.505) which was a high rating indicating that on average, the respondents reported that their firms had high levels of innovation. This was especially the case in finding new markets but innovation was least in introducing system-level partnerships. Product innovation, which is the tangible and long-lasting customer value for the most respondents in the leather industry, was reported at an above average score of 4.19 (SD=0.687, n=52). Kahn (2018) stated that innovation as an entrepreneurship outcome emphasizes the results sought including innovations in products, processes, marketing, business model, supply chain and organization. Similar dimensions of new products, processes and business models were stated by Donkor *et al.* (2018). These dimensions are aligned to the indicators of the innovation variable in this study.

Table 4.16: Innovation

Description	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Mean	Std. Deviation
New Product Innovations Introduced	0	2	10	56	33	4.19	.687
New Process Innovations Introduced	0	2	13	44	40	4.23	.757
New Organizational Forms or Structures Introduced	4	8	13	50	25	3.85	1.017
New Capabilities Introduced	0	0	12	60	29	4.17	.617
New Customers or Markets Introduced	0	0	2	54	44	4.42	.537
New Customer Engagements Introduced	0	2	4	63	31	4.23	.614
New System Interactions or Partnerships Introduced	4	6	17	52	21	3.81	.971
New Revenue Generation Practices Introduced	0	4	15	58	23	4.00	.741
New Cost Structures Introduced	0	2	17	58	23	4.02	.700
Innovation						4.10	.505

4.5.8 Performance

The performance scale consisted of nine items. Annual changes in the dependent performance variable was measured using +, 0 and – signs to denote increase, no change and decrease respectively on the item measured. Items sought to measure broad industry-related performance goals.

Total positive responses were added, less the negative or neutral responses to give a five-point score on each item. Totaled scores were coded on a scale of 1 – 5 where 1 represented a large decrease (-5 to -3 responses), small decrease (-2 to -1 responses), no change (for zero score), small increase (for +1 to +2 responses) and large increase (+3 to +5 responses). Items worded to measure negative proxies of favourable performance (such as changes in operating expenses for business cost efficiencies, product defects for product quality, and customer complaints for stakeholder/customer satisfaction respectively) were coded in the reverse order.

Average scale ratings ranged from 2.19 to 4.00 as shown in Table 4.17. This indicated that the respondents reported that their firms exhibited high levels of performance. The highest mean rating was 4.00 for the statement “Change in Productivity” (SD= 0.970, n=52). The statement with the lowest mean rating of 2.19 was “Change in Product Defects” (SD= 1.085, n=52). The average scale total was 3.47 (SD =0.647) which was a high rating indicating that on average, the respondents reported that their firms had high levels of performance. This was especially the case with increasing productivity (75% reporting a small to large increase in productivity) and least with reducing product defects (68% reported small to large decrease in defects).

Table 4.17: Performance

Description	2012	2013	2014	2015	2016	Mean	Std. Deviation
Change in Net Profit	6	10	10	52	23	3.77	1.096
Change in Sales Turn-over	4	15	6	52	23	3.75	1.100
Change in Market Share	4	6	10	58	23	3.90	.955
Change in Production Quantities	8	6	12	40	35	3.88	1.182
Change in Productivity	2	6	17	40	35	4.00	.970
Change in Product Variety	2	6	15	54	23	3.90	.891
Change in Operating Expenses	4	15	23	35	23	3.58	1.126
Change in Product Defects	31	37	17	13	2	2.19	1.085
Change in Customer Complaints	27	37	23	12	2	2.25	1.046
Performance						3.47	.647

4.6 Factor Analysis for Study Variables

This section discusses results of factor analysis for the independent, mediating and dependent variables. Factor analysis was performed using the Principal Component Analysis (PCA) with Promax rotation for convergent and discriminant validity. Zhang *et al.* (2014) used similar tests with Principal Component Analysis (PCA) was applied to obtain scores above the 0.60 threshold for all measurement items. This showed that all items had communalities with factors extracted. The indicator items for the independent variable were analyzed in an iterative process to identify those that pass the acceptable level (Eigen value >1). The data showed six factors to have a Kaiser criterion / eigenvalue ≥1 were extracted. Those that show inter-item loadings above 0.5 were highlighted and retained. Those with cross-loadings inconsistent with theoretical expectations were targeted for removal from further analysis (Hair, Black, Babin & Anderson, 2014).

Latent first-order variables were therefore extracted to construct a second-order uni-dimensional variable of entrepreneurial drive (ED). Extraction of the first-order variables in groups of orientation- and competence-types showed discriminant validity as entrepreneurial orientation (EO) and entrepreneurial competence (EC) in line with theoretical arguments and conception. The EO variable showed multi-dimensionality comprising Vision for Growth, Opportunity Recognition, and Calculated Risk-taking as first-order latent variables. The EC variable showed multi-dimensionality comprising Networking, Pursuing and Creating as first-order latent variables. Therefore EO can be studied as a second-order latent construct comprising three first-order latent variables. EC can be studied as a second-order latent construct comprising three first-order latent variables. This was consistent with theoretical postulations of this study and scholarly discourse about cognitive and behavioural dimensions of entrepreneurship (Puhakka, 2002; Baron & Ensley, 2006; Florin *et al.*, 2007; Zhang *et al.*, 2014; Sahban *et al.*, 2014; Santos *et al.*, 2015).

The second-order EO and EC variables were further extracted as third-order ED variable. Factor analysis did not show discriminant validity as dimensions of ED as a third-order factor. ED did not have discriminant validity for EO and EC, even though the latter two variables were clearly extracted as constructs of three first-order variables each. The entrepreneurial drive was therefore a single dimension construct comprising six first-order variables or two second-order variables (EO and EC) as shown in the Tables 4.29 and 4.33 Therefore, ED can be considered as a second-order construct comprising six first-order latent variables or as a third-order latent construct comprising two second-order variables. The analysis showed discriminant validity to be consistent with theoretical literature.

4.6.1 Factor Analysis for Entrepreneurial Orientation

Exploratory factor analysis was employed on Entrepreneurial Orientation construct that was measured using three sub-scales namely Vision for Growth, Opportunity Recognition and Calculated Risk-taking.

a) Suitability of Structure Detection for Entrepreneurial Orientation

The study revealed as shown in Table 4.18 that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.752 which was above 0.6 (Kaiser, 1974). This meant that the sample was adequate for factor analysis. The Chi-Square value for Bartlett's Test of Sphericity was 217.268 with degrees of freedom amount to 36 and *p*-value less than 0.05 indicating suitability of data for structure detection (Bartlett, 1954).

Table 4.18: KMO and Bartlett's Test for Entrepreneurial Orientation

Statistics		**Value**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.752
Bartlett's Test of Sphericity	Approx. Chi-Square	217.268
	Df	36
	Sig.	.000

b) Communalities for Entrepreneurial Orientation

Small values for communalities signify that the items of the construct do not fit well with the extracted factor solution, and should certainly be dropped from further analysis. Communalities above 0.4 are acceptable (Costello & Osborne, 2005). The extraction communalities for the retained items measuring entrepreneurial orientation construct as shown on Table 4.19 were all greater than 0.5 indicating that the retained items fitted well with other items in the Entrepreneurial Orientation factor solution.

Table 4.19: Communalities for Entrepreneurial Orientation

	Initial	Extraction
Vgoals	1.000	.809
Vactions	1.000	.812
Vimprovement	1.000	.898
Oalertness	1.000	.717
Odiscovery	1.000	.699
Osuccess	1.000	.686
Raffinity	1.000	.691
Rinvest	1.000	.574
Rtendency	1.000	.788

Extraction Method: Principal Component Analysis.

c) Total Variance Explained for Entrepreneurial Orientation

Based on Kaiser Criterion, three factors were imputed out of a total 9 indicators. The three factors were able to explain 74.144% of the total variance in the study data as indicated in Table 4.20. The three factors imputed attained eigenvalues in the initial solution greater or equal to 1.0. The cumulative variability explained by these imputed three factors in the extracted solution was 74.144%, showing that the three factors explained variation by the initial eigenvalues is lost during the Promax rotation of the entrepreneurial orientation factor solution (Hair *et al.*, 2014).

Table 4.20: Total Variance Explained for Entrepreneurial Orientation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.133	45.927	45.927	4.133	45.927	45.927	3.400
2	1.515	16.838	62.765	1.515	16.838	62.765	3.001
3	1.024	11.379	74.144	1.024	11.379	74.144	2.721
4	.620	6.892	81.035				
5	.496	5.516	86.551				
6	.445	4.946	91.497				
7	.376	4.179	95.676				
8	.282	3.134	98.810				
9	.107	1.190	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

d) Pattern Matrix for Entrepreneurial Orientation

As shown in Table 4.21, the pattern matrix shows the first component was Opportunity Recognition that had three items (Osuccess, Oalertness and Odiscovery) whose factor loadings ranged from 0.812 to 0.901. The second component was vision for growth that had three items (Vgoals, Vimprovement and Vactions) whose loadings ranged from

0.602 to 0.994. The third component was calculated risk taking that had three items (Rtendency, Raffinity and Rinvest) whose loadings ranged from 0.623 to 0.897.

Table 4.21: Pattern Matrix for Entrepreneurial Orientation

	Component Opportunity recognition	Vision for growth	Calculated risk taking
Osuccess	.901		
Oalertness	.829		
Odiscovery	.812		
Vgoals		.994	
Vimprovement		.905	
Vactions		.602	
Rtendency			.897
Raffinity			.859
Rinvest			.623

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

4.6.2 Factor Analysis for Entrepreneurial Competence

Exploratory factor analysis was employed on Entrepreneurial Competence construct that was measured using three sub-scales namely networking, pursuing and creating.

a) Suitability of Structure Detection for Entrepreneurial Competence

The study revealed as show in Table 4.22 that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.844 which was above 0.6 (Kaiser, 1974). This meant that the sample was adequate for factor analysis. The Chi-Square value for Bartlett's Test of Sphericity was 298.961 with degrees of freedom amount to 55 and *p*-value less than 0.05 indicating suitability of data for structure detection (Bartlett, 1954).

Table 4.22: KMO and Bartlett's Test for Entrepreneurial Competence

Statistics		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.844
	Approx. Chi-Square	298.961
Bartlett's Test of Sphericity	Df	55
	Sig.	.000

b) Communalities for Entrepreneurial Competence

Small values for communalities signify that the items of the construct do not fit well with the extracted factor solution, and should certainly be dropped from further analysis. According to Costello and Osborne (2005), communalities of 0.4 and above are acceptable. The extraction communalities for the retained items measuring the entrepreneurial competence construct as show on Table 4.23 were all greater than 0.4 indicating that the retained items fitted well with other items in the entrepreneurial competence factor solution.

Table 4.23: Communalities for Entrepreneurial Competence

Variables	Initial	Extraction
Popportunities	1.000	.786
Pcompetiveness	1.000	.711
Pfocus	1.000	.542
Nindustry	1.000	.724
Noutside	1.000	.847
Nexchange	1.000	.720
Nshared	1.000	.419
Ncollaboration	1.000	.733
Csources	1.000	.597
Cideas	1.000	.816
Csynthesis	1.000	.779

Extraction Method: Principal Component Analysis.

c) Total Variance Explained for Entrepreneurial Competence

Based on Kaiser Criterion, three factors were imputed out of a total 11 factors. The three factors were able to explain 69.770% of the total variance in the study data as indicated in Table 4.24. The three factors imputed attained eigenvalues in the initial solution greater or equal to 1.0. The cumulative variability explained by these imputed three factors in the extracted solution was 69.770%, showing that no explained variation by the initial eigenvalues is lost during the Promax rotation of the entrepreneurial competence factor solution (Hair *et al.*, 2014).

Table 4.24: Total Variance Explained for Entrepreneurial Competence

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.427	49.332	49.332	5.427	49.332	49.332	4.739
2	1.168	10.620	59.952	1.168	10.620	59.952	3.294
3	1.080	9.818	69.770	1.080	9.818	69.770	3.324
4	.815	7.411	77.181				
5	.627	5.698	82.878				
6	.571	5.190	88.069				
7	.468	4.257	92.326				
8	.277	2.521	94.846				
9	.232	2.105	96.952				
10	.203	1.844	98.796				
11	.132	1.204	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

d) Pattern Matrix for Entrepreneurial Competence

As shown in Table 4.25, the pattern matrix shows the first component was networking that had five items (Noutside, Nindustry, Nexchange, Ncollaboration and Nshared) whose factor loadings ranged from 0.601 to 0.922. The second component was creating that had three items (Csynthesis, Cideas and Csources) whose loadings ranged from 0.616 to 0.862. The third component was pursuing that had three items (Pcompetiveness, Popportunities and Pfocus) whose loadings ranged from 0.566 to 0.866. The pattern matrix provided empirical evidence to support the behavioural three-factor model of entrepreneurial competence established by Lans *et al.* (2011) from where this construct was adapted. Ng & Kee (2013) acknowledge the same competencies and their influence on firm performance. Man *et al.* (2008) affirm entrepreneurial competencies as observable behaviours that involve performance of entrepreneurial tasks to develop and utilize organizational capability, to pursue a wider competitive scope in business, to set and take action on long-term performance goals.

Table 4.25: Pattern Matrix for Entrepreneurial Competence

	Component Networking	Creating	Pursuing
Noutside	.922		
Nindustry	.850		
Nexchange	.833		
Ncollaboration	.716		
Nshared	.601		
Csynthesis		.862	
Cideas		.742	
Csources		.616	
Pcompetiveness			.866
Popportunities			.751
Pfocus			.566

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

4.6.3 Factor Analysis for Entrepreneurial Drive Using First-order Constructs

Exploratory factor analysis was performed on entrepreneurial drive (ED) as a second-order construct using the study variables. Analysis of ED as a second-order construct used first-order factors of Vision for Growth, Opportunity Recognition, Calculated Risk-taking, Networking, Pursuing and Creating. Suitability of Structure Detection for Entrepreneurial Drive as a Second-order Construct

The study revealed as shown in Table 4.26 that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.800. This meant that the sample was adequate for factor analysis. The Chi-Square value for Bartlett's Test of Sphericity was 160.329 with degrees of freedom amount to 36 and p-value less than 0.05 indicating suitability of data for structure detection (Bartlett, 1954).

Table 4.26: KMO and Bartlett's Test for Entrepreneurial Drive as a Second-order Construct

Statistics		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.800
Bartlett's Test of Sphericity	Approx. Chi-Square	160.329
	Df	15
	Sig.	.000

a) Communalities for Entrepreneurial Drive as a Second-order Construct

Small values for communalities signify that the items of the construct do not fit well with the extracted factor solution, and should certainly be dropped from further analysis. Costello and Osborne (2005) have stated that communalities above 0.4 are acceptable for analysis. The extraction communalities for the retained variables measuring the entrepreneurial drive construct as shown on Table 4.27 were all greater than 0.5

indicating that the retained first-order latent variables fitted well with other variables in the entrepreneurial drive factor solution.

Table 4.27: Communalities for Entrepreneurial Drive as a Second-order Construct

	Initial	Extraction
Vision_for_growth	1.000	.561
Opportunity_recognition	1.000	.645
Calculated_risk_taking	1.000	.564
Pursuing	1.000	.629
Creating	1.000	.712
Networking	1.000	.728

Extraction Method: Principal Component Analysis.

b) Total Variance Explained for Entrepreneurial Drive as a Second-order Construct

Based on Kaiser Criterion, one factor was imputed out of a total 6 indicators. The factor was able to explain 63.986% of the total variance in the study data as indicated in Table 4.28. The factor imputed attained eigenvalue in the initial solution greater or equal to 1.0. The variability explained by these imputed factors in the extracted solution was 63.986%, showing that no explained variation by the initial eigenvalues is lost during the Promax rotation of the entrepreneurial drive factor solution (Hair *et al.*, 2014).

Table 4.28: Total Variance Explained for Entrepreneurial Drive as a Second-order Construct

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.839	63.986	63.986	3.839	63.986	63.986
2	.664	11.074	75.059			
3	.555	9.246	84.306			
4	.470	7.834	92.140			
5	.277	4.621	96.761			
6	.194	3.239	100.000			

Extraction Method: Principal Component Analysis.

c) Pattern Matrix for Entrepreneurial Drive as a Second-order Construct

The pattern matrix shows the ED construct had six sub-variables (Vision for Growth, Opportunity Recognition, Calculated Risk-taking, Pursuing, Creating and Networking) whose factor loadings ranged were 0.749 to 0.853 as shown in Table 4.29.Results showed Entrepreneurial Drive (ED) can be studied as a second-order uni-dimesional construct (latent variable) of made of six variables: (Vision for Growth, Opportunity Recognition, Calculated Risk-taking, Pursuing, Creating and Networking). The six variables in themselves first-order latent variables. The measurement or indicator variables are presumed to cause the latent variables.

The pattern matrix for entrepreneurial drive as a second-order variable showed it to be uni-dimensional with no particular components associated with EO and EC as deduced from literature. Thus first-level indicators show convergent validity as six components of the uni-dimensional construct of ED. Covin and Wales (2012) treatise similarly and elaborately discuss the EO measurement models and assert that EO can be studied using either formative or reflective *measurement models* (distinguishing that 'there are no formative or reflective constructs, only formative and reflective measurement models').

Table 4.29: Component Matrix for Entrepreneurial Drive as a Second-order Construct

	Component
	1
Vision_for_growth	.749
Opportunity_recognition	.803
Calculated_risk_taking	.751
Pursuing	.793
Creating	.844
Networking	.853

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

4.6.4 Factor Analysis for Entrepreneurial Drive Using Second-order Constructs

Exploratory factor analysis was performed on entrepreneurial drive (ED) as a third-order construct using the study variables. Analysis of ED as a third order construct used second-order factors, namely entrepreneurial orientation and entrepreneurial competence as variables.

a) Suitability of Structure Detection for Entrepreneurial Drive as a Third-order Construct

The study revealed that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.500 as show in Table 4.30. This meant that the sample was adequate for factor analysis. The Chi-Square value for Bartlett's Test of Sphericity was 27.516 with one degree of freedom and *p*-value less than 0.05 indicating suitability of data for structure detection (Bartlett, 1954). Besides the Bartlett's Test of Sphericity to confirm a patterned relationship among the variables, assumptions for carrying out factor analysis may include Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy cut-off being >= 0.5 (Yong & Pearce, 2013).

Table 4.30: KMO and Bartlett's Test for Entrepreneurial Drive as a Third-order Construct

Statistics		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
	Approx. Chi-Square	27.516
Bartlett's Test of Sphericity	Df	1
	Sig.	.000

b) Communalities for Entrepreneurial Drive using Second-order Constructs

Small values for communalities signify that the items of the construct do not fit well with the extracted factor solution, and should certainly be dropped from further analysis. Communalities of 0.4 – 0.7 are acceptable for analysis (Costello & Osborne, 2005). The extraction communalities for the retained measures of the entrepreneurial drive construct as show on Table 4.31 were all greater than 0.5 indicating that the retained second-order latent variables fitted well with other variables in the entrepreneurial drive factor solution.

Table 4.31: Communalities for Entrepreneurial Drive Using Second-order Constructs

	Initial	Extraction
Entrepreneurial_Orientation	1.000	.827
Entrepreneurial_Competence	1.000	.827

Extraction Method: Principal Component Analysis.

c) Total Variance Explained for Entrepreneurial Drive as a Third-order Construct

Based on Kaiser Criterion, one factor were imputed out of a total two factors. The factor were able to explain 82.651% of the total variance in the study data as indicated in Table 4.32. The factor imputed attained eigenvalue in the initial solution greater or equal to 1.0. The variability explained by these imputed factor in the extracted solution was 82.651%, showing that no explained variation by the initial eigenvalues is lost during the Promax rotation of the entrepreneurial drive factor solution (Hair *et al.*, 2014).

Table 4.32: Total Variance Explained for Entrepreneurial Drive as a Third-order Construct

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.653	82.651	82.651	1.653	82.651	82.651
2	.347	17.349	100.000			

Extraction Method: Principal Component Analysis.

a) Pattern Matrix for Entrepreneurial Drive as a Third-order Construct

The pattern matrix shows the component had two items (Entrepreneurial Orientation and Entrepreneurial Competence) whose factor loadings ranged were 0.909 to 0.909 as shown in Table 4.33. Results therefore showed Entrepreneurial Drive (ED) can be studied as a third-order uni-dimensional construct (latent variable) made up of two variables: Entrepreneurial Orientation (EO) and Entrepreneurial Competence (EC). Factor analysis for entrepreneurial drive as a third-order variable derived from second-order latent variables of EO and EC showed it to be a uni-dimensional construct. Both EO and EC factors are in themselves multi-dimensional constructs based on reflective/effect measurement indicators (as opposed to causal/formative indicators) in the questionnaire. Covin and Wales (2012) have discussed an abstraction of latent variables in relation to EO. In this study, EO and EC are understood as multi-dimensional second-order constructs while ED can be understood as a uni-dimensional second-order or third-order construct.

Table 4.33: Component Matrix for Entrepreneurial Drive Using as a Third-order Construct

	Component **1**
Entrepreneurial_Orientation	.909
Entrepreneurial_Competence	.909

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

4.6.5 Factor Analysis for Innovation

Exploratory factor analysis was employed on Innovation construct that was measured using nine items. The items were introduction of new product offerings, new processes, new organizational capabilities, new organizational forms or structures, new customers/markets, new customer engagements, new partnerships or system interactions, new revenue generation practices and new cost structures.

a) Suitability of Structure Detection for Innovation by Value-system Actors

The study revealed as show in Table 4.34 that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.720 which was above the 0.6 threshold (Kaiser, 1974). This meant that the sample was adequate for factor analysis. The Chi-Square value for Bartlett's Test of Sphericity was 199.682 with degrees of freedom amount to 36 and *p*-value less than 0.05 indicating suitability of data for structure detection (Bartlett, 1954).

Table 4.34: KMO and Bartlett's Test for Innovation

Statistics		Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	199.682
	Df	36
	Sig.	.000

a) Communalities for Innovation

Small values for communalities signify that the items of the construct do not fit well with the extracted factor solution, and should certainly be dropped from further analysis. Costello and Osborne (2005) aver that communalities of 0.4 to 0.7 are acceptable for analysis. The extraction communalities for the retained items measuring innovation construct as show on Table 4.35 were all equal to or more than 0.5, indicating that the retained items fitted well with other items in the innovation factor solution.

Table 4.35: Communalities for Innovation

	Initial	Extraction
New Product Innovations Introduced	1.000	.489
New Process Innovations Introduced	1.000	.632
New Organizational Forms or Structures Introduced	1.000	.686
New Capabilities Introduced	1.000	.545
New Customers or Markets Introduced	1.000	.714
New Customer Engagements Introduced	1.000	.594
New System Interactions or Partnerships Introduced	1.000	.543
New Revenue Generation Practices Introduced	1.000	.607
New Cost Structures Introduced	1.000	.638

Extraction Method: Principal Component Analysis.

a) Total Variance Explained for Innovation

Based on Kaiser Criterion, two factors were extracted out of a total 9 indicators. The two factors were able to explain 60.542% of the total variance in the study data as indicated in Table 4.36. The two factors imputed attained eigenvalues in the initial solution greater or equal to 1.0. The cumulative variability explained by these imputed two factors in the extracted solution was 60.542%, showing that no explained variation by the initial eigenvalues is lost during the Promax rotation of the innovation factor solution (Hair *et al.*, 2014).

Table 4.36: Total Variance Explained for Innovation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.147	46.073	46.073	4.147	46.073	46.073	3.611
2	1.302	14.470	60.542	1.302	14.470	60.542	3.292
3	.988	10.974	71.516				
4	.780	8.662	80.178				
5	.557	6.188	86.366				
6	.460	5.111	91.477				
7	.391	4.341	95.818				
8	.212	2.355	98.173				
9	.164	1.827	100.000				

Extraction Method: Principal Component Analysis.
a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

b) Pattern Matrix for Innovation

As shown in Table 4.37, the pattern matrix shows the first component had five items (InnovCosts, InnovRevenues, InnovSystInteraction, InnovOrgForm and InnovCapabilities) whose factor loadings ranged from 0.578 to 0.871. The second component had four items (InnovMarkets, InnovCustEngagement, InnovProducts and InnovProcesses) whose loadings ranged from 0.607 to 0.888.

The pattern matrix shows that innovation can be dichotomous or multi-dimensional variable. The first component of the innovation variable comprises items measuring how the business is modeled in terms of business system or concept (InnovCosts, InnovRevenues, InnovSystInteraction, InnovOrgForm and InnovCapabilities) and are associated with business model, structure or administrative innovation. The second component can be seen as having items measuring the business-customer interface (InnovMarkets, InnovCustEngagement, InnovProducts and InnovProcesses) which are changes associated with products and customers.

The multi-dimensionality of innovation is supported by theoretical and empirical studies (Clauss, 2016; Bashir *et al.*, 2017).). Clauss (2016) found three second-order dimensions, namely value creation innovation, value proposition innovation, and value capture innovation. Literature on business model innovation (BMI) suggests that it is the design of novel business-system interactions that determines how a firm does business. BMI was described by Bashir and Verma (2017) as "the process of finding a novel way of doing business which results in reconfiguring of value creation and value capturing mechanisms" which can occur by changing even one element of a business model. Studying established but entrepreneurial firms, Amit and Zott (2012) identified creating novel activities to be performed (activity system content), new ways of activities' linkage an sequence (activities structure), changing parties that perform activities (activities governance) with which parallels to capability innovation (with resultant costs revenues changes), change in organizational form and change in an organization's interaction with the industry system respectively. This is in line with scholarly literature on business model innovation as distinct form of innovation from product and process innovation (Bashir *et al.*, 2017) which are the second component of the innovation variable in this study. Further, Roach, Ryman and Makani (2016) found measures of innovativeness to discriminate into two sub-constructs, namely innovation orientation and product/service innovation. In this study, factor analysis for the innovation variable extracted two dimensions that could be classified as system / configuration changes and customer-interface / content changes.

Table 4.37: Pattern Matrix for Innovation

	Component	
	1	**2**
InnovCosts	.871	
InnovRevenues	.837	
InnovSystInteraction	.753	
InnovOrgForm	.688	
InnovCapabilities	.578	
InnovMarkets		.888
InnovCustEngagement		.823
InnovProducts		.716
InnovProcesses		.607

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

4.6.6 Factor Analysis for Performance of Value-system Actors

Exploratory factor analysis was employed on Performance construct that was measured using nine items. Results of structure detection and communalities are presented below.

a) Suitability of Structure Detection for Performance of Value-system Actors

The study revealed as shown in Table 4.38 that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.796 which was above 0.6 (Kaiser, 1974). This meant that the sample was adequate for factor analysis. The Chi-Square value for Bartlett's Test of Sphericity was 325.913 with degrees of freedom amount to 36 and *p*-value less than 0.05 indicating suitability of data for structure detection (Bartlett, 1954).

Table 4.38: KMO and Bartlett's Test for Performance of Value-system Actors

Statistics		**Values**
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.796
	Approx. Chi-Square	325.913
Bartlett's Test of Sphericity	Df	36
	Sig.	.000

b) Communalities for Performance of Value-system Actors

Small values for communalities signify that the items of the construct do not fit well with the extracted factor solution, and should certainly be dropped from further analysis. Moderate communalities of 0.4 to 0.7 are common in social sciences and are acceptable for analysis (Costello & Osborne, 2005). The extraction communalities for the retained items measuring the performance construct as show on Table 4.39 were all 0.4 or greater, indicating that the retained items fitted well with other items in the performance of value-system factor solution.

Table 4.39: Communalities for Performance of Value-system Actors

	Initial	Extraction
Change in Net Profit	1.000	.782
Change in Sales Turn-over	1.000	.905
Change in Market Share	1.000	.685
Change in Production Quantities	1.000	.875
Change in Productivity	1.000	.665
Change in Product Variety	1.000	.396
Change in Operating Expenses	1.000	.488
Change in Product Defects	1.000	.849
Change in Customer Complaints	1.000	.822

Extraction Method: Principal Component Analysis.

c) Total Variance Explained for Performance of Value-system Actors

Based on Kaiser Criterion, two factors were extracted out of a total 9 indicators. The two factors were able to explain 71.853% of the total variance in the study data as indicated in Table 4.40. The two factors imputed attained eigenvalues in the initial solution greater or equal to 1.0. The cumulative variability explained by these imputed two factors in the extracted solution was 71.853%, showing that no explained variation by the initial eigenvalues is lost during the Promax rotation of the performance of value system factor solution (Hair *et al.*, 2014).

Table 4.40: Total Variance Explained for Performance of Value-system Actors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.499	49.991	49.991	4.499	49.991	49.991	4.487
2	1.968	21.862	71.853	1.968	21.862	71.853	2.036
3	.798	8.867	80.720				
4	.557	6.194	86.913				
5	.434	4.819	91.732				
6	.344	3.820	95.552				
7	.205	2.279	97.831				
8	.133	1.475	99.307				
9	.062	.693	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

d) Pattern Matrix for Performance of Value-system Actors

The pattern matrix for business performance showed two components. The pattern matrix in Table 4.41 shows the first component had six items (BusPerformSales, BusPerformQuantity, BusPerformProfit, BusPerformProductivity, BusPerformShare and BuPerformVariety) whose factor loadings ranged from 0.632 to 0.949. The second component had three items (BusPerformDefects, BusPerformComplaints and BusPerformExpenses) whose loadings ranged from 0.613 to 0.911.

These results support previous studies on entrepreneurship identify business performance as a dependent variable whose measures include the same indirect measures. Diverse performance measures were used in this study as inductively determined from theoretical and empirical literature (Wiklund and Shepherd, 2003 and 2005; Rauch *et al.*, 2009; Jain, 2011; Sanchez, 2012; Al-Ansari, 2014; Kraus *et al.*, 2012; Ndubisi *et al.* 2012; McMullan *et al.*, 2015). According to Rashid, Ismail, Rahman and Afthanorhan (2018), the choice of performance measures should depend on research conceptualization and needs. Further wider holistic performance measures that include financial and non-financial categories are advised. The relative importance of breadth over depth for practice and theory in SME performance measurement systems has been highlighted by Garengo, Biazzo and Bititici (2005).

For the Performance variable, the items with positively stated desired outcome measures of performance (namely improvement in profit, sales, markets, quantity, productivity, and variety) showed convergence as one dimension, while those with negative non-desired / undesirable performance outcomes (reduction in business expenses, defects and customer complaints). Expenses can be considered as an indirect measure of operational and financial performance efficiencies, product defects as proxy measure of product quality and customer complaints as a proxy for stakeholder (in this customer) satisfaction.

Table 4.41: Pattern Matrix for Performance of Value-system Actors

	Component	
	1	**2**
BusPerformSales	.949	
BusPerformQuantity	.937	
BusPerformProfit	.885	
BusPerformProductivity	.816	
BusPerformShare	.812	
BuPerformVariety	.632	
BusPerformDefects		.911
BusPerformComplaints		.881
BusPerformExpenses		.613

Extraction Method: Principal Component Analysis.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

4.7 Test for Statistical Assumptions

Assumptions of linearity, normality, multi-collinearity and heteroscedasticity were tested to establish suitability of the data for linear regression and statistical modeling. Results of the tests for statistical assumptions are presented below.

4.7.1 Test for Linearity

Graphical methods using scatter plots of residuals of the variables were used to test the linearity assumption. Using SPSS, the standardized residuals of the independent entrepreneurial drive variable versus the dependent performance variable were plotted in a graph. Visual inspection did not reveal a curved relationship in the scatter plot. Therefore, the distribution in the scatter plot output in Figure 4.4 shows that the data close to linear relationship (Fanzco & Farmer, 2014). Sekaran and Bougie (2013) suggest that not satisfying the linearity assumption is not a serious problem in multiple linear regression compared to other conditions.

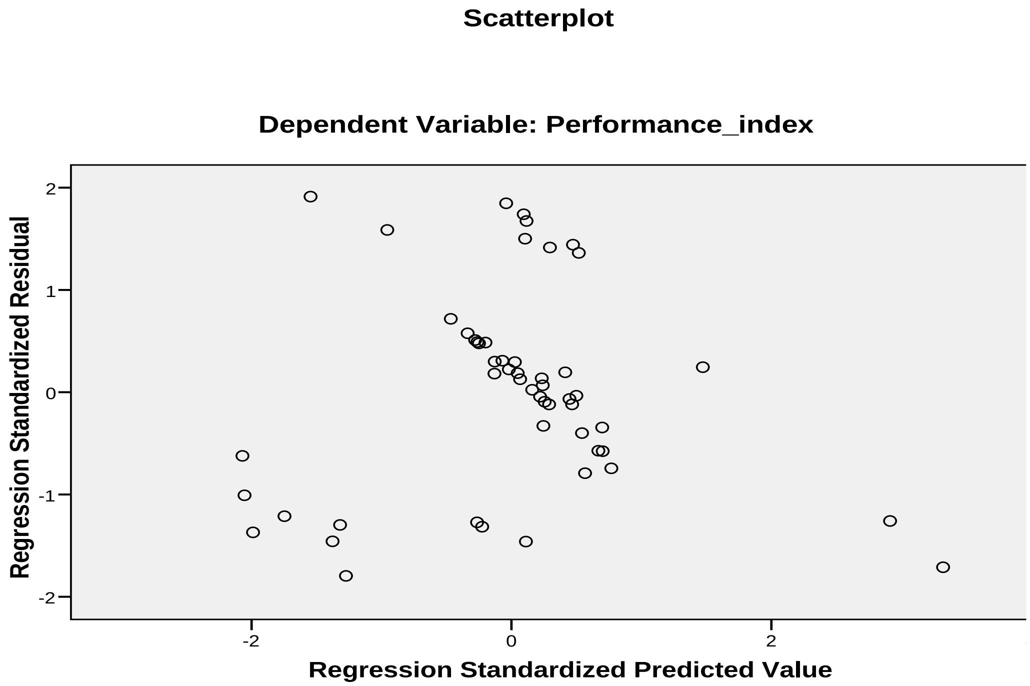


Figure 4.4: Scatter Plot for the Relationship between Independent Entrepreneurial Drive and Dependent Performance Variables

4.7.2 Test for Normality

Shapiro-Wilk test is a robust test for normality that generates a *p*-value that indicates whether the probability estimation follows normal distribution. Shapiro-Wilk test is performed on all the all independent and the dependent constructs. The test concludes that data is normal if the *p*-value are not less than 0.05 (Shapiro & Wilk, 1965). Table 4.42 indicates that the significance levels of all the variables were more than 0.05, which is a clear indication that all the variables were normally distributed and therefore other statistical analysis could be carried out on the data.

Table 4.42: Shapiro-Wilk Test for Study Variables

	Shapiro-Wilk		
	Statistic	**Df**	**Sig.**
Pursuing	.960	52	.073
Creating	.970	52	.211
Networking	.985	52	.752
Calculated_risk_taking	.976	52	.372
Vision_for_growth	.956	52	.053
Opportunity_recognition	.972	52	.340

4.7.3 Test for Multicollinearity

To determine whether multicollinearity existed, collinearity test was conducted using, tolerance, and variance correlation analysis. The collinearity results presented in Table 4.43 show that the variables have a VIF that is less than 10 and tolerance value more than 0.1 ruling out the possibility of multicollinearity (Jensen & Ramirez, 2013). A VIF cut-off of 5 was applied (Garson & Statistical Associates Publishing (SAP), 2012). Therefore, the results imply that there was no multicollinearity problem among the variables and hence the level of multicollinearity in the model can be endured.

Table 4.43: Test for Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Pursuing	.499	2.004
	Creating	.709	1.410
	Networking	.586	1.707
	Calculated_risk_taking	.500	2.001
	Vision_for_growth	.501	1.995
	Opportunity_recognition	.541	1.849

a. Dependent Variable: Performance_index

4.7.4 Test for Heteroscedasticity

The study used Breusch-Pagan and Koenker test to estimate heteroscedasticity. Breusch-Pagan and Koenker tests the null hypothesis that the variances of the error terms are constant. The test rejects the null hypothesis when the significant value is less than 5% (McDonald, 2014). Table 4.44 displays the results of Breusch-Pagan and Koenker test showing significant values being more than 5% indicating that heteroscedasticity was not a problem.

Table 4.44: Breusch-Pagan and Koenker Test Statistics and Sig-values

	LM	Sig
BP	2.056	.152
Koenker	3.481	.062

Null hypothesis: heteroskedasticity not present (Homoscedasticity) if sig-value less than 0.05, reject the null hypothesis.

4.8 Correlation among Study Variables

Correlation among the independent variables is illustrated by the correlation matrix (n=52) in Table 4.45. The results indicate that pursuing had a strong positive relationship with performance of value-system actors (r=.548, $p<0.05$). Creating had a strong positive relationship with performance of value system (r=.590, $p<0.05$). Networking had a strong positive relationship with performance of value system (r=.524, $p<0.05$). Calculated Risk-taking had a strong positive relationship with performance of value system actors (r=.461, $p<0.05$). Vision for growth had a strong positive relationship with performance of value system (r=.539, $p<0.05$). Opportunity recognition had a strong positive relationship with performance of value system (r=.584, $p<0.05$). Similarly, innovation had a strong positive relationship with performance (r=.638, $p<0.05$). A correlation of above 0.90 is a strong indication that the variables may be measuring the same thing (Tabachnick & Fidell, 2013). The fact that all the correlations were less than 0.90 was an indication that the factors were sufficiently different measures of separate variables, and consequently, this study utilized all the variables.

Table 4.45: Correlation among Study Variables

Correlations

		Performance_index	**Innovation_index**	**Pursuing**	**Creating**	**Networking**	**Calculated_risk_taking**	**Vision_for_growth**	**Opportunity_recognition**
Performance_index	Pearson Correlation	-							
	Sig. (2-tailed)								
Innovation_index	Pearson Correlation	.638**	-						
	Sig. (2-tailed)	.000							
Pursuing	Pearson Correlation	.548**	.606**	-					
	Sig. (2-tailed)	.000	.000						
Creating	Pearson Correlation	.590**	.711**	.714**	-				
	Sig. (2-tailed)	.000	.000	.000					
Networking	Pearson Correlation	.524**	.592**	.524**	.664**	-			
	Sig. (2-tailed)	.000	.000	.000	.000				
Calculated_risk-taking	Pearson Correlation	.461**	.437**	.452**	.438**	.519**	-		
	Sig. (2-tailed)	.001	.001	.001	.001	.000			
Vision_for_growth	Pearson Correlation	.539**	.456**	.486**	.697**	.717**	.447**	-	
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.001		
Opportunity_recognition	Pearson Correlation	.584**	.458**	.637**	.552**	.548**	.720**	.519**	-
	Sig. (2-tailed)	.000	.001	.000	.000	.000	.000	.000	

4.9 Test for Hypotheses

Hypotheses testing required the use of linear regression analysis. This was performed using the study data and the results interpreted according to the adjusted R^2 values and *p*-values at $p < 0.05$ significance level (2-tailed). Independent variables under study were regressed on the performance index, initially as individual variables and then as dimensions of the orientation and competence constructs. The first-order entrepreneurial drive construct was regressed to test mediation of effect of innovation in the relationship with performance. Seven research hypotheses, and their respective null hypotheses, that the study sought to test are addressed in this section.

4.9.1 Relationship between Dimensions of Entrepreneurial Orientation and Performance of Value-system Actors

This section examined the relationship between dimensions established as factors of entrepreneurial orientation and the performance variable to test the study hypotheses. The relationships between the entrepreneurial orientation variables are first analyzed individually in simple linear regression and equations developed on their relationship with performance. Next, stepwise multiple linear regression is applied and a collective regression equation developed from the results.

a) Relationship between Vision for Growth and Performance of Value-system Actors

The first objective of the study was to determine the relationship between vision for growth and performance of value-system actors in the leather industry in Kenya. The following null hypothesis was formulated:

H_{01}: Vision for growth as an entrepreneurial orientation *does not* determine performance of value-system actors in Kenya's leather industry.

H_{a1}: Vision for growth as an entrepreneurial orientation determines performance of value-system actors in Kenya's leather industry.

Table 4.46 shows that the adjusted R-squared is 0.277 meaning that the vision for growth was able to explain 27.7% variations in the performance of value-system actors in Kenya's leather industry in while the rest are explained by the error term. The F-statistic is 20.492 with a *p*-value of 0.0000 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 2.068 + 0.554 \text{ Vision for Growth}$$

The beta coefficient for Vision for Growth was 0.554. This indicates that a unit increase in Vision for Growth would result in 55.4% increase in performance of value system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 4.527 and 0.000 respectively. Therefore, at $p<0.05$

level of significance the null hypothesis is rejected implying that having a Vision for Growth was a significant determinant of performance of value-system actors in the leather industry in Kenya. There is a statistically significant positive relationship between vision for growth and performance of value-system actors in the leather industry. Vision for growth of value-system actors is able to explain close to 30% of performance as self-reported by key informants in the enterprises studied.

Though there are few studies using vision for growth as a variable in entrepreneurship, theoretical literature in fields of entrepreneurship and strategy indicate that having a clear, well-articulated vision is essential for venture performance. Chi-hsiang (2015) emphasizes the importance of an entrepreneurial vision in guiding the starting of a venture into a desired strategic future and profoundly influencing its performance. A similar positive and significant relationship between vision and SMEs performance has been realized from literature review in Nigeria (Bakar *et al.*, 2015).

Table 4.46 Relationship between Vision for Growth and Performance of Value-system Actors

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.539[a]	.291	.277	.73665

Predictors: (Constant), Vision_for_growth

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.120	1	11.120	20.492	.000[b]
	Residual	27.132	50	.543		
	Total	38.252	51			

a. Dependent Variable: Performance_index
b. Predictors: (Constant), Vision_for_growth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	**Std. Error**	**Beta**		
1	(Constant)	2.068	.439		4.708	.000
	Vision_for_growth	.554	.122	.539	4.527	.000

a. Dependent Variable: Performance_index

b) Relationship between Opportunity Recognition and Performance of Value-system Actors

The second objective of the study was to determine the relationship between Opportunity Recognition and performance of value system actors in the leather industry in Kenya. The following null hypothesis was formulated:

H_{02}: Opportunity recognition as an entrepreneurial orientation *does not* determine performance of value-system actors in Kenya's leather industry.

H_{a2}: Opportunity recognition as an entrepreneurial orientation determines performance of value-system actors in Kenya's leather industry.

Table 4.47 shows that the adjusted R-squared is 0.328 meaning that opportunity recognition was able to explain 32.8% variations in the performance of value-system actors in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 25.910 with a *p*-value of 0.0000 which implies that the regression model is significant. Therefore, the t statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 1.614 + 1.078 \text{ Opportunity Recognition}$$

The beta coefficient for opportunity recognition was 1.078. This indicates that a unit increase in opportunity recognition would result in 107.8% increase in performance of value system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 5.090 and 0.000 respectively. Therefore, at $p < 0.05$ level of significance the null hypothesis is rejected implying that opportunity recognition was a significant determinant of performance of value system actors in the leather industry in Kenya.

On the basis of these statistics, the study concludes that there is significant positive relationship between opportunity recognition and performance of value-system actors in the leather industry in Kenya. Guo *et al.* (2016) provided empirical evidence of opportunity recognition having a positive effect on SME performance with business model innovation as a mediator. Using measures for presence of opportunity recognition in Polish SMEs, Kusa, Duda and Suder (2021) found that an entrepreneur's openness to opportunity determined firm performance.

Table 4.47: Relationship between Opportunity Recognition and Performance of Value-system Actors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.584[a]	.341	.328	.70987

a. Predictors: (Constant), Opportunity_recognition

b. Dependent Variable: Performance_index

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.056	1	13.056	25.910	.000[b]
	Residual	25.196	50	.504		
	Total	38.252	51			

a. Dependent Variable: Performance_index

b. Predictors: (Constant), Opportunity_recognition

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.614	.479		3.370	.001
	Opportunity_recognition	1.078	.212	.584	5.090	.000

a. Dependent Variable: Performance_index

c) Relationship between Calculated Risk-taking and Performance of Value-system Actors

The third objective of the study was to determine the relationship between calculated risk taking and performance of value-system actors in the leather industry in Kenya. The following null hypothesis was formulated:

> **H_{03}:** Calculated risk-taking as an entrepreneurial orientation *does not* determine performance of value-system actors in Kenya's leather industry.

H_{a3}: Calculated risk-taking as an entrepreneurial orientation determines performance of value-system actors in Kenya's leather industry.

Table 4.48 shows that the adjusted R-squared is 0.196 meaning that the calculated risk taking was able to explain 19.6% variations in the performance of value systems in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 13.467 with a *p*-value of 0.001 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 2.406 + 0.434 \text{ Calculated Risk-taking}$$

The beta coefficient for Calculated Risk-taking was 0.434. This indicates that a unit increase in calculated risk-taking would result in 43.4% increase in performance of value system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 3.670 and 0.001 respectively. Therefore, at $p < 0.05$ level of significance the null hypothesis is rejected implying that calculated risk-taking was a significant determinant of performance of value system actors in the leather industry in Kenya. The study concludes that there is a statistically significant positive relationship between calculated risk-taking and performance of value-system actors in the leather industry in Kenya. Bakar *et al.*, (2015) observed that risk-taking has positive relationship with SME performance in Nigeria. Dai, Maksimov, Gilbert and Fernhaber (2014) observed that moderate risk-taking has a positive influence on SME internationalization. Kusa *et al.* (2021) established that, in line with numerous entrepreneurial orientation studies, the presence risk taking in an organization leads to increased performance.

Table 4.48: Relationship between Calculated Risk-taking and Performance of Value-system Actors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.461[a]	.212	.196	.77634

a. Predictors: (Constant), Calculated Risk-taking

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.117	1	8.117	13.467	.001[b]
	Residual	30.136	50	.603		
	Total	38.252	51			

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	2.406	.448		5.376	.000
	Calculated_Risk_taking	.434	.118	.461	3.670	.001

a. Dependent Variable: Performance_index

d) Relationship between Combined Dimensions of Entrepreneurial Orientation and Performance of Value-system Actors

Table 4.49 shows the stepwise multiple linear regression analysis for dimensions of Entrepreneurial Orientation on Performance. Sequential regression of Vision for Growth, Opportunity Recognition and Calculated Risk-taking shows the three Entrepreneurial Orientation indicators account for 42.2% of variation in Performance (adjusted R^2=0.422) and that this relationship is significant (F=13.417, *p*=0.000). Every addition of a new independent variable progressively increased the combined influence on Performance from 27.7% (adjusted R^2=0.277), through 32.5% (adjusted R^2=0.325) to 42.2% (adjusted R^2=0.42.2) thus showing the importance of each in coherence with theoretical assertions. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

Unstandardized beta coefficients for three independent Entrepreneurial Orientation variables are 0.629 (Vision for Growth), 0.447 (Calculated Risk-taking), and -1.077 (Opportunity Recognition) with 2.655 as a constant. The t-statistics for the variables were 4.526, 3.492 and -3.045 respectively which were all within the acceptable at $p<0.05$ level of significance. Therefore, the regression model equation obtained from these results is:

Performance = 2.655 + 0.629 Vision for growth + 0.447 Calculated Risk-taking – 1.077 Opportunity Recognition

The beta coefficients for the independent Entrepreneurial Orientation variables changed with addition of each new variable and each had a unique contribution to variance in the dependent Performance variable. These statistics indicated that unit increases in Vision for Growth, Calculated Risk-taking and Opportunity Recognition would result in 0.629, 0.447 and a – 1.077 changes respectively in performance of value system actors in Kenya’s leather industry. Thus the Entrepreneurial Orientation variables of Vision for Growth and Calculated Risk-taking increased Performance of value-system actors in Kenya’s leather industry while Opportunity Recognition had a reducing effect.

Therefore, when analyzed separately, Vision for Growth, Opportunity Recognition and Calculated are seen to be positive individual determinants of Performance in Kenya’s leather industry. Similarly when analyzed together Vision for Growth, Opportunity Recognition and Calculated Risk-taking as entrepreneurial orientations of value-system actors, collectively determine performance in Kenya’s leather industry.

Rauch *et al.* (2009) meta-analysis and (Wales, 2016) discuss entrepreneurial orientation and it’s commonly studied dimensions as strategic posturing that determine performance of firms but that can have diverse economic outcomes.

Table 4.49: Multiple Linear Regression of Dimensions of Entrepreneurial Orientation on Performance (Stepwise)

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.539[a]	.291	.277	.73665
2	.592[b]	.351	.325	.71176
3	.675[c]	.456	.422	.65837

a. Predictors: (Constant), Vision_for_growth
b. Predictors: (Constant), Vision_for_growth, Calculated_risk_taking
c. Predictors: (Constant), Vision_for_growth, Calculated_risk_taking, Opportunity_recognition

ANOVA[a]

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	11.120	1	11.120	20.492	.000[b]
	Residual	27.132	50	.543		
	Total	38.252	51			
2	Regression	13.428	2	6.714	13.253	.000[c]
	Residual	24.824	49	.507		
	Total	38.252	51			
3	Regression	17.447	3	5.816	13.417	.000[d]
	Residual	20.806	48	.433		
	Total	38.252	51			

a. Dependent Variable: Performance_index
b. Predictors: (Constant), Vision_for_growth
c. Predictors: (Constant), Vision_for_growth, Calculated_risk_taking
d. Predictors: (Constant), Vision_for_growth, Calculated_risk_taking, Opportunity_recognition

Coefficients[a]

		Unstandardized Coefficients		**Standardized Coefficients**		
Model		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	2.068	.439		4.708	.000
	Vision_for_growth	.554	.122	.539	4.527	.000
2	(Constant)	1.557	.487		3.197	.002
	Vision_for_growth	.428	.132	.417	3.238	.002
	Calculated_risk_taking	.259	.121	.275	2.135	.038
3	(Constant)	2.655	.577		4.601	.000
	Vision_for_growth	.629	.139	.612	4.526	.000
	Calculated_risk_taking	.447	.128	.475	3.492	.001
	Opportunity_recognition	-1.077	.354	-.467	-3.045	.004

a. Dependent Variable: Performance_index

4.9.2 Relationship between Dimensions of Entrepreneurial Competence and Performance of Value-system Actors

This section examined the relationship between dimensions established as factors of entrepreneurial competence and the performance variable to test the study hypotheses. The relationships between the entrepreneurial competence variables are first analyzed individually in simple linear regression and equations developed on their relationship with performance. Next, stepwise multiple linear regression is applied and a collective regression equation developed from the results.

a) Relationship between Networking and Performance of Value systems

The fourth objective of the study was to determine the relationship between networking and performance of value system actors in the leather industry in Kenya. The following null hypothesis was formulated:

H_{04}: Networking as an entrepreneurial competence *does not* determine performance of value-system actors in Kenya's leather industry.

H_{a4}: Networking as an entrepreneurial competence determines performance of value-system actors in Kenya's leather industry.

Table 4.50 shows that the adjusted R-squared is 0.260 meaning that the networking was able to explain 26.0% variations in the performance of value systems in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 18.923 with a *p*-value of 0.000 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 2.074 + 0.445 \text{ Networking}$$

The beta coefficient for networking was 0.445. This indicates that a unit increase in networking would result in 44.5% increase in performance of value-system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 4.350 and 0.001 respectively. Therefore, at $p < 0.05$ level of significance the null hypothesis is rejected implying that networking was a significant determinant of performance of value system actors in the leather industry in Kenya.

On the basis of these statistics, the study concludes that there is significant positive relationship between networking and performance of value-system actors in the leather industry in Kenya. Li *et al.* (2015) used Structural Equation Modeling (SEM) to show that entrepreneurial networking capacity has a positive effect on firm market performance. Konrad (2013) found that social networking has a significant positive effect on establishment of cultural businesses in Germany.

Table 4.50: Relationship between Networking and Performance of Value-system Actors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.524[a]	.275	.260	.74499

a. Predictors: (Constant), Networking

b. Dependent Variable: Performance_index

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	10.502	1	10.502	18.923	.000[b]
	Residual	27.750	50	.555		
	Total	38.252	51			

a. Dependent Variable: Performance_index

b. Predictors: (Constant), Networking

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.074	.455		4.560	.000
	Networking	.445	.102	.524	4.350	.000

a. Dependent Variable: Performance_index

a) Relationship between Pursuing and Performance of Value-system Actors

The fifth objective of the study was to determine the relationship between pursuing and performance of value system actors in the leather industry in Kenya. The following null hypothesis was formulated:

$H0_5$: Pursuing as an entrepreneurial competence does not determine performance of value-system actors in Kenya's leather industry.

Ha_5: Pursuing as an entrepreneurial competence determines performance of value-system actors in Kenya's leather industry.

Table 4.51 shows that the adjusted R-squared is 0.286 meaning that the pursuing was able to explain 28.6% variations in the performance of value-system actors in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 21.434 with a *p*-value of 0.000 which implies that the regression model is significant at 0.05. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model

The regression equation obtained from this output is:-

$$\text{Performance} = 2.125 + 0.516\ \text{Pursuing.}$$

The beta coefficient for pursuing was 0.516. This indicates that a unit increase in pursuing would result in 51.6 % increase in performance of value system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 4.630 and 0.000 respectively. Therefore, at $p < 0.05$ level of significance the null hypothesis is rejected implying that pursuing was a significant determinant of performance of value-system actors in the leather industry in Kenya. The study concludes that there is a statistically significant positive relationship between pursuing and performance of value-system actors in the leather industry in Kenya.

Studying Swiss software firms, Urwyler (2006) established that despite limited prior knowledge of markets, how to serve customers and customer problems, the entrepreneurial process involved identification, evaluation and exploitation of opportunities through "search activities, deep customer interaction and reciprocal learning". These externally-oriented concepts are related to the pursuit indicators used in this study of searching for information, opportunities and proactive competing. According to Urwyler (2006) actively reducing or creating horizontal and vertical knowledge asymmetries, can open up opportunities for exploitation. The emphasis on active, effort, searching, as descriptors of what entrepreneurs do cannot be gainsaid. Lui, Ko, Ngugi and Takeda (2017) empirically affirmed the upward curvilinear relationship between pursuing entrepreneurial behaviour (PEB), of which pro-activeness is a central element, and the ultimate innovation outcome of new product development as a performance outcome, (moderated by innovative capability and market orientation). In line with previous studies, Kusa *et al.* (2021) found that presence proactiveness enhanced the role of entrepreneurship-determinant variables, especially openness to opportunity and risk-taking in determining SME performance.

Table 4.51: Relationship between Pursuing and Performance of Value-system Actors

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.548[a]	.300	.286	.73177

a. Predictors: (Constant), Pursuing

b. Dependent Variable: Performance_index

ANOVAa

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.478	1	11.478	21.434	.000[b]
	Residual	26.775	50	.535		
	Total	38.252	51			

a. Dependent Variable: Performance_index

b. Predictors: (Constant), Pursuing

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.125	.418		5.086	.000
	Pursuing	.516	.111	.548	4.630	.000

a. Dependent Variable: Performance_index

c) Relationship between Creating and Performance of Value-system Actors

The sixth objective of the study was to determine the relationship between creating and performance of value-system actors in the leather industry in Kenya. The following null hypothesis was formulated:

H_{06}: Creating as an entrepreneurial competence *does not* determine performance of value-system actors in Kenya's leather industry.

H_{a6}: Creating as an entrepreneurial competence determines performance in of value-system actors Kenya's leather industry.

Table 4.52 shows that the adjusted R-squared is 0.336 meaning that the Creating was able to explain 33.6% variations in the performance of value-system actors in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 26.756 with a *p*-value of 0.000 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 1.352 + 0.759 \text{ Creating}$$

The beta coefficient for creating was 0.759. This indicates that a unit increase in creating would result in 75.9 % increase in performance of value system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 5.173 and 0.000 respectively. Therefore, at $p< 0.05$ level of significance the null hypothesis is rejected implying that creating was a significant determinant of performance of value-system actors in the leather industry in Kenya. On the basis of these statistics, the study concludes that there is significant positive relationship between creating and performance of value-system actors in the leather industry in Kenya.

Studies of creating as an entrepreneurial behavior are few. However, creative action and experimentation that leads to new possibilities or artifacts and a determinant of innovation performance is seen as central to the design process in recent studies on effectuation. Effectuation, and its antecedents of means and leverage contingency (experimentation), was found to have a strong and positive impact on firm-level innovation and ultimately firm performance. Experimentation can be seen in the broader effectuation logic of creating opportunities through leveraging resources in adaptive and novel ways (Roach *et al.*, 2016).

Table 4.52: Relationship between Creating and Performance of Value System-actors

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.590[a]	.349	.336	.70595

a. Predictors: (Constant), Creating

b. Dependent Variable: Performance index

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.334	1	13.334	26.756	.000[b]
	Residual	24.918	50	.498		
	Total	38.252	51			

a. Dependent Variable: Performance index

b. Predictors: (Constant), Creating

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.352	.521		2.594	.012
	Creating	.759	.147	.590	5.173	.000

a. Dependent Variable: Performance index

d) Relationship between Combined Dimensions of Entrepreneurial Competence and Performance of Value-system Actors

Table 4.53 shows the stepwise multiple linear regression analysis for dimensions of Entrepreneurial Competence on performance. Sequential regression of Networking, Pursuing, and Creating showed the three entrepreneurial competence factors account for 42.9% of variation in Performance (adjusted R^2=0.429) and that this relationship is significant (F=13.787, *p*=0.000). Every addition of a new independent variable three progressively increases the combined influence on Performance from 18.0% (Adjusted R^2=0.180) through 38.4% (Adjusted R^2=0.384) to 42.9% (Adjusted R^2=0.429) thus showing the importance of each in consistency with theoretical assertions. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

Unstandardized beta coefficients for three independent entrepreneurial competence variables are 1.119 (Creating), -1.092 (Pursuing), and 0.415 (Networking) with 2.466 as a constant. The t-statistics the variables were 4.314, -4.878 and 2.208 respectively and corresponding *p*-value for were all within the acceptable at $p<0.05$ level of significance. Therefore, the regression model equation obtained from these results is:

Performance = 2.466 + 1.119 Creating – 1.092 Pursuing + 0.415 Networking

The beta coefficients for the independent Entrepreneurial Competence variables changed with addition of each new variable and each had a unique contribution to variance in the dependent Performance variable. These statistics indicated that a unit increase in Creating would result in a 1.119 increase in Performance of value-system actors in Kenya's leather industry. A unit increase in Pursuing would result in a 1.092 decrease in performance of value-system actors in Kenya's leather industry. A unit increase in Networking would result in a 0.415 increase in performance of value-system actors in Kenya's leather industry. However the coefficient for Networking in the combined model was insignificant for the sample studied of Kenya's leather industry. This implied that Networking did not have a significant increase in performance of the sample studied.

When analyzed together, Networking, Pursuing and Creating as entrepreneurial competencies of value-system actors, collectively determine performance in Kenya's leather industry. These results affirmed earlier theoretical assertions and empirical evidence of direct and indirect effects of entrepreneurial competencies on long-term firm performance (Man *et al.*, 2008 and Lans, *et al.*, 2011). Individual entrepreneurial competence, conceptualized as learnable skills or behavioural capacities, has been empirically seen to positively determine venture performance (Barazandeh *et al.*, 2015). Barazandeh *et al.* (2015) concluded that skill was that main entrepreneurial competence that is learnable and changeable, while personality traits did not form part of entrepreneurial competence. The results were therefore consistent with theoretical and empirical literature on the effect of Networking, Pursuing and Creating variables on Performance.

Table 4.53: Multiple Linear Regression of Dimensions of Entrepreneurial Competence on Performance (Stepwise)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.443[a]	.196	.180	.78405
2	.639[b]	.408	.384	.67966
3	.680[c]	.463	.429	.65426

a. Predictors: (Constant), Creating

b. Predictors: (Constant), Creating, Pursuing

c. Predictors: (Constant), Creating, Pursuing, Networking

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.515	1	7.515	12.225	.001[b]
	Residual	30.737	50	.615		
	Total	38.252	51			
2	Regression	15.617	2	7.809	16.904	.000[c]
	Residual	22.635	49	.462		
	Total	38.252	51			
3	Regression	17.705	3	5.902	13.787	.000[d]
	Residual	20.547	48	.428		
	Total	38.252	51			

a. Dependent Variable: Performance_index

b. Predictors: (Constant), Creating

c. Predictors: (Constant), Creating, Pursuing

d. Predictors: (Constant), Creating, Pursuing, Networking

Coefficients[a]

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.363	.762		1.788	.080
	Creating	.740	.212	.443	3.496	.001
2	(Constant)	2.469	.712		3.470	.001
	Creating	1.382	.239	.828	5.781	.000
	Pursuing	-.861	.206	-.600	-4.188	.000
3	(Constant)	2.466	.685		3.601	.001
	Creating	1.119	.259	.670	4.314	.000
	Pursuing	-1.092	.224	-.761	-4.878	.000
	Networking	.415	.188	.372	2.208	.032

a. Dependent Variable: Performance_index

4.9.3 Relationship between Entrepreneurial Drive and Performance of Value-system Actors

The seventh objective was to determine whether innovation mediates the relationship between Entrepreneurial drive and the performance of value-system actors in leather industry in Kenya. The null hypothesis formulated was:

H_{07}: Innovation *does not* mediate the relationship between entrepreneurial drive and performance of value-system actors in Kenya's leather industry.

H_{a7}: Innovation mediates the relationship between entrepreneurial drive and performance of value-system actors in Kenya's leather industry.

To establish the mediation effect, Baron and Kenny's (Kenny, 2016) causal step approach was used. The Sobel Test and Bootstrapping methods were used to test the significance of the mediation relationship. The first step involved testing the correlation between Entrepreneurial Drive and Performance of value-system actors which was found to be statistically significant.

a) Correlation between Entrepreneurial Drive and Performance of Value-system Actors

The results for the relationship between Entrepreneurial Drive and Performance of value-system actors were assessed using Pearson correlation coefficient as shown in Table 4.54. The output indicate that Entrepreneurial drive had a strong positive correlation with Performance of value-system actors ($r=0.745$, $p<0.05$) and this relationship was significant. At a correlation coefficient <0.9, the factors are sufficiently distinct concepts.

Table 4.54: Correlation between Entrepreneurial Drive and Performance of Value-system Actors

		Performance Index	**Entrepreneurial Drive**
Performance Index	Pearson Correlation	1	
	Sig. (2-tailed)		
Entrepreneurial Drive	Pearson Correlation	.745**	-
	Sig. (2-tailed)	.000	

** Correlation is significant at the 0.01 level (2-tailed).

Test for Mediation between Entrepreneurial Drive and Performance of Value-system Actors by Innovation

b) Relationship between Entrepreneurial Drive and Performance of Value-system Actors

Table 4.55 shows that the adjusted R-squared is 0.547 meaning that the Entrepreneurial Drive was able to explain 54.7% variations in the Performance of value-system actors in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 62.511 with a *p*-value of 0.0000 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 1.455 + 1.194 \text{ Entrepreneurial Drive}$$

The beta coefficient for Entrepreneurial Drive was 1.194. This indicates that a unit increase in Entrepreneurial Drive would result in 119.4% increase in Performance of value-system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 7.906 and 0.000 respectively. Therefore, Entrepreneurial Drive has a significant influence on Performance of value-system actors in the leather industry in Kenya at $p<0.05$ level of significance.

Table 4.55: Relationship between Entrepreneurial Drive and Performance of Value-system Actors

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.745[a]	.556	.547	.58308

Predictors: (Constant), Entrepreneurial_Drive

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.253	1	21.253	62.511	.000[b]
	Residual	16.999	50	.340		
	Total	38.252	51			

a. Dependent Variable: Performance_index
b. Predictors: (Constant), Entrepreneurial_Drive

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.455	.332		4.381	.000
	Entrepreneurial_Drive	1.194	.151	.745	7.906	.000

a. Dependent Variable: Performance_index

c) Relationship between Entrepreneurial Drive and Innovation by Value-system Actors

Table 4.56 shows that the adjusted R-squared is 0.329 meaning that the Entrepreneurial Drive was able to explain 32.9% variations in the Innovation in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 26.004 with a *p*-value of 0.000 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Innovation} = 2.409 + 1.038 \text{ Entrepreneurial drive.}$$

The beta coefficient for Entrepreneurial Drive was 1.038. This indicates that a unit increase in Entrepreneurial Drive would result in 103.8 % increase in innovation of value-system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 5.099 and 0.000 respectively. Therefore, Entrepreneurial Drive has a significant influence on Innovation of value-system actors in the leather industry in Kenya at $p<0.05$ level of significance.

Table 4.56: Relationship between Entrepreneurial Drive and Innovation by Value-system Actors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.585[a]	.342	.329	.78625

Predictors: (Constant), Entrepreneurial_Drive
Dependent Variable: Innovation_index

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.075	1	16.075	26.004	.000[b]
	Residual	30.909	50	.618		

	Total	46.985	51			

a. Dependent Variable: Innovation_index
b. Predictors: (Constant), Entrepreneurial_Drive

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.409	.448		5.380	.000
	Entrepreneurial_Drive	1.038	.204	.585	5.099	.000

a. Dependent Variable: Innovation_index

d) **Relationship between Innovation and Performance of Value-system Actors**

Table 4.57 shows that the adjusted R-squared is 0.396 meaning that the Innovation was able to explain 39.6% variations in the Performance of value systems in leather industry in Kenya while the rest are explained by the error term. The F-statistic is 34.376 with a *p*-value of 0.000 which implies that the regression model is significant. Therefore, the t-statistics and *p*-values can reliably be used to test the significance of coefficients in the model.

The regression equation obtained from this output is:

$$\text{Performance} = 1.338 + 0.576\ \text{Innovation}$$

The beta coefficient for Innovation was 0.576. This indicates that a unit increase in Innovation would result in 57.6% increase in Performance of value-system actors in the leather industry in Kenya. The t-statistic and corresponding *p*-value were 5.863 and 0.000 respectively. Therefore, innovation has a significant influence on

Performance of value-system actors in the leather industry in Kenya at $p<0.05$ level of significance.

Table 4.57: Relationship between Innovation and Performance of Value-system Actors

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638[a]	.407	.396	.67332

a. Predictors: (Constant), Innovation_index
b. Dependent Variable: Performance_index

ANOVA[a]

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	15.585	1	15.585	34.376	.000[b]
	Residual	22.668	50	.453		
	Total	38.252	51			

a. Dependent Variable: Performance_index
b. Predictors: (Constant), Innovation_index

Coefficients[a]

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	1.338	.464		2.886	.006
	Innovation index	.576	.098	.638	5.863	.000

a. Dependent Variable: Performance_index

e) Multiple Linear Regression of Entrepreneurial Drive and Innovation on Performance of Value-system Actors

Table 4.58 shows results of the multiple linear regression analysis of independent entrepreneurial drive and mediating innovation variables on the dependent performance variable. The results show that entrepreneurial drive and innovation account for 60.2% of variation in performance (Adjusted R^2=0.602) and that this relationship is significant (F=39.604, p=0.000). Therefore, the t-statistics and p-values can reliably be used to test the significance of coefficients in the model.

Unstandardized beta coefficients for the independent and mediating variables are 0.906 and 0.277 respectively, with 0.786 as a constant. The t-statistics the variables were 5.194 and 2.824 respectively. The corresponding p-value for were all within the acceptable at p<0.05 level of significance Therefore, the regression model equation obtained from these results is:

Performance = 0.786 + 0.906 Entrepreneurial Drive + 0.277 Innovation

These statistics indicated that a unit increase in entrepreneurial drive would result in a 0.906 increase in performance of value-system actors in Kenya's leather industry. A unit increase in innovation would result in a 0.277 increase in performance of value-system actors in Kenya's leather industry. However, the coefficient for Innovation in the multiple linear regression was insignificant for the sample studied of Kenya's leather industry. This implied that while a significant part of the model, Innovation did not have a significant increase in performance of the sample studied of Kenya's leather industry.

Significance of the mediator innovation variable in Step 3 where entrepreneurial drive is controlled shows mediation effect of innovation on the entrepreneurial drive-performance link is supported. Step 4 where both the independent entrepreneurial drive and the mediator innovation variables are significant in predicting performance shows that innovation mediates the entrepreneurship-performance link. Significance of the innovation variables in both Steps 3 and 4 shows that innovation partially mediates the entrepreneurial drive-performance link. The results therefore further support rejection of the null hypothesis and acceptance of the alternative hypothesis at $p<0.05$ level of significance. Therefore, innovation has a significant and partial mediating effect on the entrepreneurial drive-performance link.

Table 4.58: Multiple Linear Regression of Entrepreneurial Drive and Innovation on Performance of Value-system Actors

Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.786(a)	.618	.602	.54623

a Predictors: (Constant), innovation_index, Entreprenurial_Drive

ANOVA(b)

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	23.632	2	11.816	39.604	.000(a)
	Residual	14.620	49	.298		
	Total	38.252	51			

a Predictors: (Constant), innovation_index, Entreprenurial_Drive
b Dependent Variable: Performance_index

Coefficients(a)

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**	**B**	**Std. Error**
1	(Constant)	.786	.391		2.012	.050
	Entreprenurial_Drive	.906	.174	.566	5.194	.000
	innovation_index	.277	.098	.308	2.824	.007

a Dependent Variable: Performance_index

f) Significance of Mediation between the Entrepreneurial Drive and Performance Link

To establish the significance of the mediation effect of Innovation on the relationship between entrepreneurial drive and the Performance of value-system actors in leather industry in Kenya, the Sobel test and bootstrapping methods were used in the study (Kenny, 2016). Use of both methods provides an unambiguous understanding of the mediation effect established through the Baron and Kenny method. The Sobel test involves multiplication of coefficient estimates for the paths between independent variable and mediator variable (a), and the mediator variable and the dependent variable (b) and determining the ratio of the resulting value to standard error (Ozdil & Kutlu, 2019).

The significance is measured by the following formula:

z-value = a*b/SQRT(b2*sa2 + a2*sb2)

Where,

a = raw (unstandardized) regression coefficient for the association between the independent variable and mediator.

sa = standard error of a.

b = raw coefficient for the association between the mediator and the dependent variable (when the intervening variable is also a predictor of the dependent variable).

sb = standard error of b.

The resulting Z-value is the score of the mediation effect. If z-score is greater than 1.96 when checked against the probabilities corresponding to a standard normal distribution, the mediation effect is interpreted to be statistically significant at the 0.05 level.

As shown in Table 4.59, the results indicate that the Z-value for the Sobel test (Z=3.84695101) with a *p*-value of 0.00011960 (two-tailed) which is less than the $p<0.05$ test threshold for significance. Therefore, at $p<0.05$ level of significance the null hypothesis is rejected implying that innovation mediates the relationship between Entrepreneurial Drive and Performance of value-system actors in the leather industry in Kenya. On the basis of these statistics, the study confirms that there is a significant mediating effect of innovation on the relationship between entrepreneurial drive and performance of value-system actors in Kenya's leather industry. The partial mediation effect of innovation on the entrepreneurial drive and performance link is established in the four sequential steps above (Kenny, 2016).

Table 4.59: Significance of Sobel Test

Mediation	**Z-value for the Sobel test**	**One-tailed probability**	**Two-tailed probability**
Entrepreneurial drive and performance mediated by innovation	3.84695101	0.00005980	0.00011960

Bootstrapping is a re-sampling method that does not require the assumption of normality in sampling distribution to test mediation. It involves a process of estimating the indirect effect in multiple re-sampling. Bootstrapping produced lower standard errors and was bootstrapping provided more reliable results in small samples like the one used in this study (Ozdil & Kutlu, 2019). Repeating the process thousands of times produces an empirical normal distribution from which an estimate the confidence intervals of the indirect effect is obtained. If zero is not in the confidence interval, the researcher can be confident that the indirect effect is different from zero (Kenny, 2016).

As shown in Table 4.60, the bootstrapping procedure revealed that approximately 61.78% of the variance in performance was accounted for by the entrepreneurial drive and innovation predictors ($R^2 = 0.6178$). Results showed entrepreneurial drive was a significant predictor of performance, (β=0.9056, SE=0.1744, t(52)=5.1936, $p<0.05$), and that innovation was a significant predictor of performance, (β=0.2775, SE=0.0982, t(52)=2.8240, $p<0.05$). Entrepreneurial drive accounted for 55.56% of variation in performance ($R^2 = 0.5556$) and was a significant predictor of performance after controlling for the mediator, innovation, (β =1.1937, SE=0.1510, t(52)=7.9064, $p<0.05$). Re-sampling was done five thousand times at 95 % confidence levels using the PROCESS macro Version 3 (Hayes & Rockwood, 2016). The bootstrapping statistics indicated the mediation effect was significant at α=0.05.

Table 4.60: Results of the Bootstrapping Procedure

PROCESS Procedure for SPSS Version 3.3

Y: Performance X: ED M: innovation Sample Size: 52

OUTCOME VARIABLE: innovation

Model Summary

R	R-sq	MSE	F	df1	df2	p
.5849	.3421	.6182	26.0042	1.0000	50.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.4090	.4477	5.3804	.0000	1.5097	3.3083
ED	1.0381	.2036	5.0994	.0000	.6292	1.4470

OUTCOME VARIABLE: Performance

Model Summary

R	R-sq	MSE	F	df1	df2	p
.7860	.6178	.2984	39.6034	2.0000	49.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	0.7863	.3909	2.0117	.0498	.0008	1.5717
ED	.9056	.1744	5.1936	.0000	.5552	1.2560
innovation	.2775	.0982	2.8240	.0068	.0800	.4749

TOTAL EFFECT MODEL

OUTCOME VARIABLE: Performance

Model Summary

R	R-sq	MSE	F	df1	df2	p
.7454	.5556	.3400	62.5114	1.0000	50.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	1.4547	.3320	4.3810	.0001	.7877	2.1216
ED	1.1037	.1510	7.9064	.0000	.8904	1.4969

TOTAL, DIECT AND INDIRECT EFFECTS OF X ON Y

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
1.1973	.1510	7.9064	.0000	.8904	1.4969

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.9056	.1744	5.1936	.0000	.5552	1.2560

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
innovation	.2880	.1269	.0393	.5360

This study's results therefore are in agreement with previous studies on the determination of performance of entrepreneurial businesses by innovation and its mediation of the entrepreneurship-performance link. On the basis of the Sobel test and bootstrapping statistics, the study confirms that there is a significant mediating effect of innovation on the relationship between vision for growth and performance of value-system actors in Kenya's leather industry. Given that the direct relationship between entrepreneurial drive and performance is significant, then the mediating effect of innovation is partial. The partial mediation effect of innovation on the entrepreneurial drive and performance link is established in the four sequential steps above (Kenny, 2016, Ozdil & Kutlu, 2019). Musuva-Musimba (2013) applied the Sobel test and bootstrapping methods to establish significance of mediation for a sample of fifty-eight respondents (86.2% response rate). Madhoushi *et al.* (2011), Kraus *et al.* (2012) Ndubisi *et al.* (2012), Kollman *et al.* (2012), Al-Ansari (2014) have found that innovation has a significant direct relationship with attributes of entrepreneurial performance and that it mediates the entrepreneurship-performance link. Acs *et al.* (2015) assert that innovation is a mediator of firm growth performance.

Regression analysis by Abdilahi, Hassan & Muhumed (2017) showed that innovation, including product innovation, marketing innovation and organizational innovation, significantly affected SME performance. Although innovation has ambivalent both positive and negative effects on performance, especially sales or financial growth, some such as administrative innovations can lead to better SME performance (Lin & Chen, 2007; Ndesaulwa & Kikula, 2016). Despite not distinguishing cognitive and behavioural characteristics of entrepreneurs (their study labeled what one may consider diverse behaviour, skill, knowledge and attitudes as entrepreneurial competencies), Umar, Omar, Hamzah and Hashim

(2018) found that innovation partially mediates the relationship between various entrepreneurial competencies and SME (financial and non-financial) performance link in Malaysia.

4.10 Optimal Model

The analysis shows a direct relationship in the entrepreneurial drive and performance and an indirect entrepreneurial drive-performance link as mediated by innovation. The optimal model is a revision of the conceptual framework based on results of an iterative process of validation, factor and regression analysis on the variables identified for the study. The analyses showed entrepreneurial drive indicators reduced from thirty-six to twenty that in turn discriminated into two three-dimensional second-order constructs. The entrepreneurial drive construct and the two second-order entrepreneurial orientation and entrepreneurial competence constructs determined innovation and performance outcomes. Innovation and performance were measured showed construct validity as measured using all nine indicators each as originally conceptualized. The resultant optimal regression model equation captures this relationship between entrepreneurial drive and venture outcome of performance that is partially mediated by innovation. The resultant optimal regression equation for relationship is therefore:

$$P = 0.786 + 0.906\, ED + 0.277\, I + \varepsilon$$

Where,

ED = Entrepreneurial Drive of value-system Actors

I = Innovation by value-system Actors

P = Performance of value-system Actors

ε = Error term.

Figure 4.5 shows a conceptual framework of the optimal empirical model for the relationship between entrepreneurial drive, innovation and performance variables.

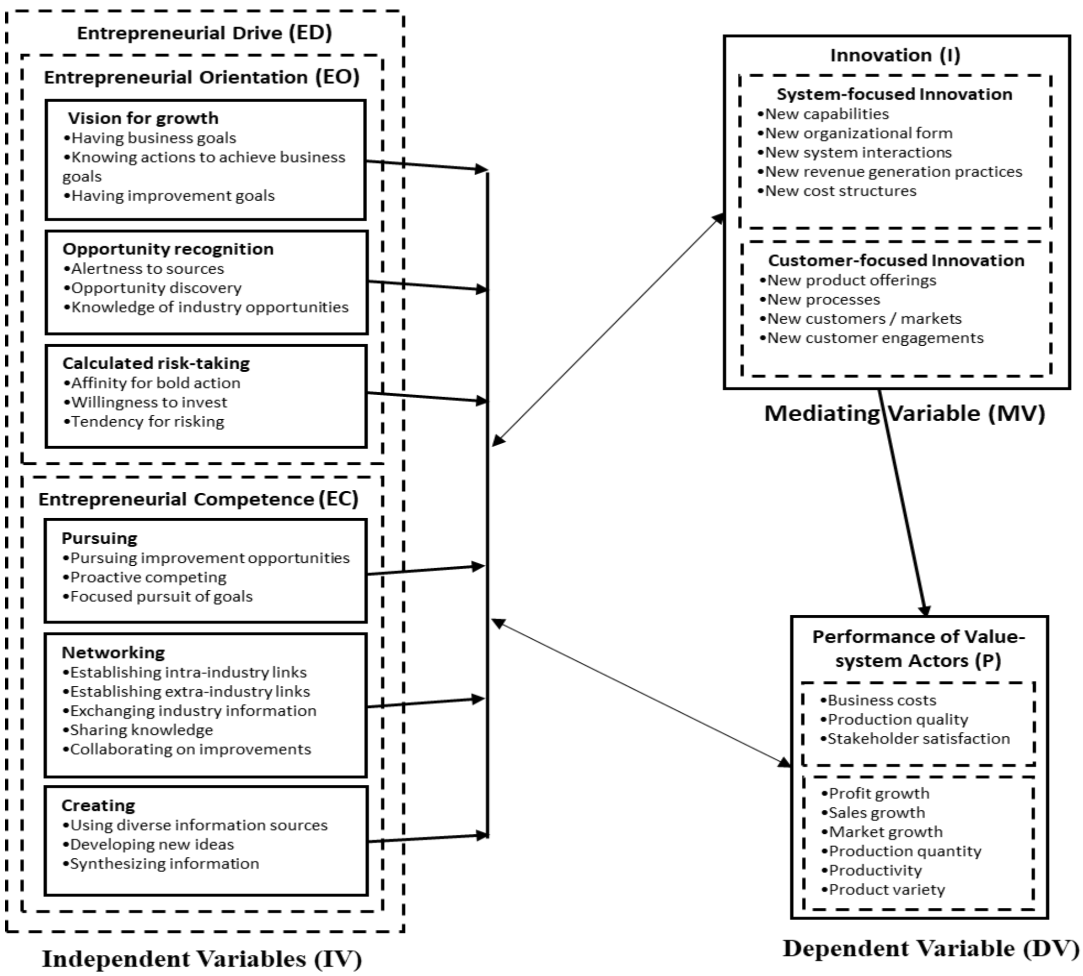


Figure 4.5 Conceptual Framework of the Empirical Model Showing the Relationship between Entrepreneurial Drive and Firm Performance and the Partial Mediating Effect of Innovation

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses conclusions from the research findings as they relate to the study objectives. Further, implications on entrepreneurship studies and practices are addressed. Recommendations for further research in development of entrepreneurship theory, application in entrepreneurship practice such as new venture creation, business exploration and exploitation, and development of entrepreneurship through training and policy guidelines, especially in the context of industries as entrepreneurial ecosystems, are suggested.

5.2 Summary of Major Findings

Over half of the respondents' businesses could be classified as small and micro enterprises (SME's) in Kenya by virtue of their employment levels, average turnover. The vast majority of respondents in the sample studied were male and as owners/owner managers. Ownership by males was higher in the leather industry than the national average of males owning licensed MSME's. There was also a significant older generation of value-system actors who could be a resource in networking for industry knowledge transfer to younger or newer entrants. Majority of the businesses were in processing and delivery roles of the leather value-system.

5.2.1 Entrepreneurial Drive

Factor analysis therefore revealed entrepreneurial drive (ED) as a valid construct that can be measured using *twenty* measurement items adapted for this research, which can further be developed as *six-factor* second-order construct or as a *two-factor* third-order construct. Results were consistent with theoretical conjectures and proposed conceptualization showing ED to be a construct comprising six first-order variables or two-factor second-order latent variables. Thus, ED can therefore be measured as a uni-dimensional second-order construct comprising six factors (vision for growth, opportunity recognition, calculated risk-taking, networking, pursuing and creating) or as a third-order construct comprising two (entrepreneurial orientation and entrepreneurial competence) factors. This study did not support the perspective of ED as a multi-dimensional construct. Despite theoretical support, the study did not show entrepreneurial orientation (EO) and entrepreneurial competence (EC), nor their constituent factors, as independent latent variables of the ED construct. However, EO and EC are themselves multi-dimensional constructs.

Empirical evidence from this study showed that entrepreneurial drive of value-system actors in Kenya's leather industry was a significant determinant of their ventures' innovation and performance outcomes. Further, the entrepreneurial drive-performance link was partially mediated by innovation outcomes. Thus, as a cognitive and behavioural characteristic of entrepreneurs, the entrepreneurial drive construct was a significant determinant of performance of value-system actors in Kenya's leather industry this relationship was partially mediated by innovation as hypothesized.

5.2.2 Entrepreneurial Orientation

This study provided empirical affirmation for entrepreneurial orientation as a discernable dimension of the entrepreneurial drive construct as conceptualized.

The study showed that as a cognitive trait, entrepreneurial orientation was a latent second-order variable comprising vision for growth, opportunity recognition and calculated risk-taking dimensions. Empirical evidence from this study showed that dimensions of entrepreneurial orientation were individually and collectively significant determinants of value-system actors' ventures' performance outcomes in Kenya's leather industry. Thus a disposition to having a vision for growth, recognizing business opportunities and taking calculated risks by entrepreneurs in Kenya's leather industry significantly determined their venture performance. Among the three factors of entrepreneurial orientation, opportunity recognition had the greatest increasing effect on performance of value-system actors in Kenya's leather industry.

Vision for growth was first-order latent variable of entrepreneurial orientation and entrepreneurial drive constructs. This study establishes vision for growth as a dimension of the cognitive-disposition EO construct, rather than as a firm-level attribute in previous studies. Empirical evidence from this study showed that and vision for growth as an entrepreneurial orientation of value-system actors in Kenya's leather industry was a significant determinant of their ventures' performance. Vision for growth had an increasing effect on venture performance. Thus an inclination to having a vision for growth was a significant entrepreneurial trait that increased venture performance in Kenya's leather industry. Of the six first-order latent entrepreneurial drive variables, vision for growth was rated highest by the study respondents, thus underscoring the importance of having growth goals as an entrepreneurial disposition.

Opportunity recognition was first-order latent variable of entrepreneurial orientation and entrepreneurial drive constructs. Empirical evidence from this study showed that and opportunity recognition as an entrepreneurial orientation of value-system actors in Kenya's leather industry was a significant determinant of their ventures' performance. Opportunity recognition increased performance of value-system actors in Kenya's leather industry. Thus a disposition towards opportunity recognition was a significant entrepreneurial trait that increased venture performance in Kenya's leather industry. Compared to other entrepreneurial competencies, an increase in inclination towards recognizing opportunities had the highest increase effect on performance in Kenyan leather industry ventures.

This research affirms previous studies showing the significance of opportunity recognition as an individual's cognitive process leading to pursuit decisions either to launch a venture or exploit the business opportunity. Innovation and performance are thus desirable outcome results whose genesis is identification of business opportunities. Such opportunities include those internal (within the firm's resources and control) and external (industry related and outside firm's control) to the business.

Calculated risk-taking was a first-order latent variable of entrepreneurial orientation and entrepreneurial drive constructs. Empirical evidence from this study showed that and calculated risk-taking as an entrepreneurial orientation of value-system actors in Kenya's leather industry was a significant determinant of their ventures' performance. Calculated risk-taking had an increasing effect on venture performance. Thus an inclination to taking calculated risks was a significant entrepreneurial trait that increased venture performance in Kenya's leather industry. Despite the importance of as an entrepreneurial orientation in determining venture performance among Kenya's leather industry value-system actors, research respondents rated their risk-taking propensity at the lowest amongst first-order variables studied. This study was consistent with previous scholarly work showing that risk-taking as an orientation of entrepreneurs is a significant determinant of venture performance.

5.2.3 Entrepreneurial Competence

The study provided empirical affirmation for entrepreneurial competence as a discernable element of the entrepreneurial drive construct as conceptualized. Factor analysis showed pursuing, networking and creating as having convergent validity as multi-dimensional first-order latent variables of the entrepreneurial competence construct. Empirical evidence from this study showed that dimensions of entrepreneurial competence were individually and collectively significant determinants of value-system actors' ventures' performance outcomes in Kenya's leather industry. Thus behaviours geared towards pursuing business opportunities, creating novel value and networking activities by entrepreneurs in Kenya's leather industry significantly determined their venture performance. Of the three entrepreneurial competence factors studied, creating behaviours had the greatest increasing effect on performance of value-system actors in Kenya's leather industry.

Networking was first-order latent variable of entrepreneurial competence and entrepreneurial drive constructs. Empirical evidence from this study showed that and networking as an entrepreneurial competence was a significant determinant of value-system actors venture performance. Networking had an increasing effect on performance of value-system actors in Kenya's leather industry. This study supports earlier research by showing that having networking linkages is important in facilitating an entrepreneur's performance especially in access to resources such as knowledge.

Pursuing was first-order latent variable of entrepreneurial competence and entrepreneurial drive constructs. The depiction of active searching behaviour in studies addressing proactivity supports the concept of pursuing as an entrepreneurial competence which can be developed. Empirical evidence from this study showed that and pursuing as an entrepreneurial competence of value-system actors in Kenya's leather industry was a significant determinant of their ventures' performance. Pursuing had an increasing effect on venture performance in the sample studied of value-system actors in Kenya's leather industry. Ability to pursue entrepreneurial opportunities was a significant entrepreneurial trait that decreased venture performance in Kenya's leather industry. The study affirms observations scholarly assertions on the significance of taking action on perceived opportunities for entrepreneurship outcomes to be realized.

Creating was first-order latent variable of entrepreneurial competence and entrepreneurial drive constructs. Empirical evidence from this study showed that and creating as an entrepreneurial competence of value-system actors in Kenya's leather industry was a significant determinant of their ventures' performance. Creating had an increasing effect on venture performance of value-system actors in Kenya's leather industry. Creating had the second highest ratings of the six first-order latent entrepreneurial drive variables by respondents, showing its importance as an entrepreneurial practice. Further, amongst other competences, an increase in creating resulted in the highest increase in performance of Kenyan leather industry ventures.

5.2.4 Innovation by Value-system Actors

This study showed that value-system actors from Kenya's leather industry scored above average in innovation. This study revealed a dichotomous nature of the innovation construct. The first component associated with the business system or model is hereby referred to as *system-focused innovation*. The second component associated with customer-focused activity or output and is referred to here as *customer-focused innovation*. Innovation had significant positive correlations with all six factors of the entrepreneurial drive and the performance variables. Entrepreneurial drive was a significant determinant of Innovation. Entrepreneurial drive had an increasing effect on innovation. Thus, entrepreneurial drive of value-system actors had positive innovation outcomes in Kenya's leather industry.

Similarly, innovation was a significant determinant of venture performance in Kenya's leather industry. Innovation had an increasing effect on performance of value-system actors' ventures in Kenya's leather industry. Thus, innovation outcomes of value-system actors determined venture performance in Kenya's leather industry. Further, innovation was important as a partial mediator of the relationship between entrepreneurial drive and venture performance in Kenya's leather industry. For the sample of Kenya's leather industry value-system actors however, innovation was not a significant in increasing venture performance.

5.2.5 Performance of Value-system Actors

This study showed that value-system actors from Kenya's leather industry scored above average in performance. Factor analysis for the performance variable showed it to converge into two dimensions depending on how the questions were asked. Items that measured performance using indirect "negative" indicators –

changes operating expenses, product defects and customer complaints to measure changes business cost efficiency, product quality and customer satisfaction respectively – converged separately as one business performance factor. One possible explanation could be how the questions were asked, rather than the indicators representing a given nameable paradigm of performance. Perhaps using more direct and positive measures and statements can influence the responses and thus determine whether measures a variable such as performance is seen as multi-dimensional or uni-dimensional. The study also affirms earlier research on the need to apply diverse practical and dynamic models that include efficiency, growth and takes into account interaction with the external environment in evaluating SME performance. Performance was determined by first-order entrepreneurial drive determinants (vision for growth, opportunity recognition and calculated risk-taking as dimensions of an entrepreneurial orientation construct, and pursuing, creating and networking as dimensions of an entrepreneurial competence construct). Similarly, performance had the entrepreneurial drive as a significant second-order and third-order determinant. Performance was also determined by innovation. The entrepreneurial drive-performance link was partially mediated by innovation.

5.3 Conclusion

This study provided empirical evidence supporting several theoretical assertions and empirical evidence from previous scholarly work in entrepreneurship. Entrepreneurial drive could be studied as a second-order uni-dimensional *six-factor* construct comprising three entrepreneurial orientation (vision for growth, opportunity recognition and calculated risk-taking) and three entrepreneurial competence (pursuing, networking and creating) factors which could be measured using twenty indicators. Entrepreneurial drive could also be studied as third-order a *two-factor* uni-dimensional third-order construct measured using two second-order constructs of entrepreneurial orientation and entrepreneurial competence. The first-order entrepreneurial drive factors increased performance of value-system actors in Kenya's leather industry. In particular, opportunity recognition and creating had the greatest increasing effect on performance. These results were consistent with theoretical conjectures and proposed conceptualization. Further, this study affirmed the partial mediating effect of innovation on the entrepreneurship drive-performance link. However, this study did not support the perspective of ED as a multi-dimensional construct.

In turn, EO and EC were conceptualized as second-order constructs determined by previously studied, and some empirically established, variables of Vision for Growth, Opportunity Recognition, Calculated Risk-taking (as cognitive dimensions of ED), and Pursuing, Networking and Creating (as behavioural dimensions of ED). Of the six dimensions of entrepreneurial drive, opportunity recognition and creating had the largest influence on performance of value-system actors in Kenya's leather industry. This means that increasing both the disposition towards recognizing business opportunities and the ability to create new value would have the greatest impact on performance of ventures in the industry. The significance of all the six dimensions implies that they are all important in determining the outcomes of entrepreneurial endeavours through innovation.

The results implied that entrepreneurs can increase performance for their businesses by having a vision with clear improvement goals and actions for their achievement. They also need to be know where to look for opportunities, explore areas for business improvement and equip themselves with knowledge of their industry opportunities. Opportunities realized would need to be actively pursued to be of practical use. This requires cultivating a willingness to take bold action to invest in carefully considered yet uncertain future returns. Networking within and beyond the industry would present new industry knowledge that would aid in recognition of opportunities. A focused pursuit of set improvement goals, the discovered new opportunities ahead of competing entities require to be translated into creations of novel value for the ventures, and by extension the entire industry, to be competitive in a globalized economic order.

Innovation could be studied as a dichotomous construct comprising business-system administration measures (introduction of new organizational capabilities, organizational forms, system interactions, revenue streams and cost structures) and market or customer-focused measures (processes, products, markets, customer engagement) measures. This is consistent with recent studies on Business Model Innovation (BMI). Innovation was an outcome of entrepreneurial drive of value-system actors in Kenya's leather industry. Innovation, as a firm-level entrepreneurship outcome, was determined by ED as a second-order variable. Innovation also determined performance of value-system actors.

It was possible to study the performance variable using broad financial and non-financial measures such as changes in sales, product quantity, profitability, productivity, market share and product variety, product quality, customer satisfaction and business costs. Performance is determined by entrepreneurial drive, its sub-variables of EO and EC and innovation. Rather than conclude that the performance variable is a multi-dimensional construct, this study first considered that the questions on product defects, customer complaints and business expenses were designed, worded and coded to measure an undesirable negative performance outcome as an indirect (proxy) measure of a desirable, positive firm performance attribute (product quality, customer satisfaction and businesses cost control outcomes respectively). The wording of performance measures used therefore may lead to discrimination depending on whether they are worded positively or negatively.

5.4 Recommendations

The role of entrepreneurship, and therein that of the entrepreneur, in social and economic development has been widely acknowledged. The entrepreneurial drive construct can find application in further academic research and in entrepreneurship development from a perspective that links individual entrepreneurship to the industry-ecosystem competitiveness. The understanding of the entrepreneurial drive and its relationship with innovation and performance outcomes at firm and industry ecosystem levels can be useful in assessing, guiding, predicting and harnessing entrepreneurial capacity of individuals, firms and industries for global competitiveness. Therefore, the concept of entrepreneurial drive has applications in scholarship, policy making and practice at individual, firm and also at ecosystem levels.

In academia, factors of entrepreneurship studied here can be used to deepen our understanding of entrepreneurship phenomenon in terms of its manifestations and outcomes. This study not only avers that entrepreneurship is an individual phenomenon, but proposes the use of entrepreneurial drive as a valid construct comprising orientation (propensity or disposition) and competence (actions or behaviour) dimensions. Entrepreneurial drive, as a holistic construct that combines traditional cognitive and behavioural perspectives, and linking this individual characteristic to the firm and ecosystem levels can be valuable in theory building.

Further, innovation and performance can be studied using broad measures applicable to ecosystems and as entrepreneurial outcomes.

Entrepreneurial drive construct and its various elements can be used as learning areas for students and to examine the efficacy of entrepreneurship development programs. Practicing entrepreneurs could use the tools refined from contextual studies to find out their drive and therefore develop their ability to achieve outcomes from entrepreneurship. This could be extended to developing entrepreneurship in entire value-system actors for more entrepreneurial and competitive industries such as leather. Thus, training programs targeted at industry-players can be used develop entrepreneurial drive, create entrepreneurial capacity (awareness, knowledge, skills and dispositional attitudes) and to facilitate exposure (opportunity for relevant information and industry networking). Prospective and practicing entrepreneurs can develop entrepreneurial drive especially in contexts of industries so that they can take specific opportunities and act on them to achieve superior performance.

Training and development programs for nascent and practicing entrepreneurs can be designed to assess and develop specified entrepreneurial orientation and competence dimensions, namely vision for growth, recognition of opportunities, taking of calculated risks, pursuing opportunities, networking, creating, and innovation, for improvement in entrepreneurship performance. Trainings can be used to sharpen the entrepreneur’s ability to craft elaborate moving-target or growth goals with complementary action plans for their achievement. Knowledge and skills could be developed for scanning the environment for business opportunities using multiple sources of information from within and beyond a given industry. Individuals can be sensitized to their affinity for risk-taking and assessment of outcome options for bold action with a view to improving their willingness to make affordable investments for uncertain benefits. Training to create awareness on the need to take prompt action on business improvements areas and goals ahead of competing elements would enhance the entrepreneur's proactive pursuit of business opportunities. Regarding networking, entrepreneurs can be given opportunity and encouraged to find linkages within and outside a given industry for knowledge sharing and collaboration activities. To come up with creative outputs, entrepreneurs can be taught critical thinking skills in order to discern facts from opinions, analyze business situations, synthesize diverse information to come up with creative outputs. To turn the creative ideas into tangible innovation outputs, entrepreneurs could be made aware while being challenged to explore and exploit the spectrum of customer-focused, venture-focused and ecosystem-focused innovation opportunities. By addressing individual capabilities and actions towards explorative and exploitative entrepreneurship, business ventures can be formed and applied to create innovations and linkages for competitive industry ecosystems.

The entrepreneurial drive of an industry's actors across the value-system (an entrepreneurial ecosystem perspective) can determine the industry's performance and competitiveness. Since competition is globalized and is partially mediated by industry innovativeness, then entrepreneurial drive of the diverse actors can determine competitiveness of an industry. This is especially important in traditional and factor-based industries such as leather in Kenya which has a high growth and employment potential. The concept of entrepreneurial drive can therefore be used to design of industry-ecosystem policies that encourage among others, creating and networking for purposes of knowledge links for value-addition players that support industries to achieve superior results. Industry regulators could adopt policies for networking within and outside the industry for knowledge exchange. Such links could be used to encourage exchange of knowledge, market and supplier relations, and collaborative innovation for relative (sustainable competitive) advantage in the global marketplace. This would further earlier observations of a need to link systemic policy and individual practice where entrepreneurial abilities determine socially productive economic outcomes (economic development and living standards). This research urges adoption of an entrepreneurial ecosystem perspective for development of policies supportive of factor-based industries such as leather in Kenya. This would facilitate achievement of Kenya's goals of promoting industrialization and manufacturing as outlined in Vision 2030 and Big Four Agenda respectively. The fourth industrial revolution characterized by rapid technological developments in Artificial Intelligence (AI) and Internet of Things (IoT) also make it critical to understand the how entrepreneurship in factor-based industries, and innovation in particular, fits in the new globalized economic competition landscape.

For performance measures to be meaningful in entrepreneurship discipline and practice, they should be change-oriented to identify growth and should therefore be dynamic or moving targets rather than static. In both scholarship and interventions, entrepreneurial outcomes of innovation and performance should be measured using broad measures as explored, identified and applied in this study. This is especially necessary in capturing entrepreneurial outcomes from heterogeneous actors in an industry while remaining relevant to the ecosystem's boundaries and goals. This is especially the case today where there is a move towards accounting for social or shared value and the three P's of profits, people and planet as attributes of purposeful performance. Such entrepreneurial outcomes should therefore consider sustainability concerns of economic, social and ecological perspectives.

As is the nature of research in general, this study was limited to use of a few factors, a small, sample, and a single industry in one economic sector and country. Further, the heterogeneous group of actors and roles in the ecosystem were used but the level of analysis was limited to the firm. The study's conclusions may therefore apply more to the sample studied of Kenya's leather industry than being general. For this reason, the study recommends an expanded scope of future research to include other economic regions, sectors and industries for theory building and eventual application. Cross-sectional and longitudinal studies could be carried out with larger samples and levels of analysis at both firm, ecosystem roles and industry levels. Such studies could benefit from the perspectives, methods, tools and updated knowledge as has been put forward in this study.

5.4 Contributions of the Study to Existing Knowledge

This study contributes to theory building by exploring and empirical validating entrepreneurial drive as uni-dimensional second- and third-order latent constructs that determine entrepreneurial outcomes of performance at firm and industry levels through innovation. It contributes to empirical research on entrepreneurship as an individual rather than a firm attribute, and to our understanding of how cognitive dispositions can be delineated from behaviours. In particular, it introduces vision for growth as an entrepreneurial orientation, creating as an entrepreneurial competence, and entrepreneurial drive as an encompassing entrepreneurship attribute comprising cognitive-behavioural factors. It further provides a conceptual framework for theory building, development and practice of entrepreneurship in relation to an industry ecosystem.

This study showed empirical evidence for EO as an individual cognitive three-factor construct, as opposed to a firm attribute as it appears in most entrepreneurship studies. EO comprised vision for growth as a dimension in addition to the traditionally studied opportunity recognition and risk-taking. It therefore attempts to elucidate and provide direction on the conceptual inconsistency in theoretical and empirical literature observed by scholars.

This study also provided empirical validation for a model of EC as a three-factor construct comprising behavioural dimensions, namely networking, pursuing and creating. In particular, creativity, creation and creativeness are widely studied as determinants of innovation and performance, but few studies have approached creating as an individual behavioural competence and its relationship with entrepreneurial outcomes.

The study also elucidates the role of innovation as an outcome of entrepreneurship and a partial mediator of the entrepreneurship-performance link. Innovation is conceptualized and measured as an outcome rather than a tendency or behaviour of entrepreneurship. Previous studies have shown innovation to have an ambivalent relationship with performance. This study provides empirical evidence for the positive causal relationship between firm innovation and performance, when the latter uses a wide range of measures in addition to the traditional financial measures. Measurement of performance changes comprise a shift from static, non-comparative measures normally used in scholarship. Growth changes can be called *entrepreneurial performance*.

The study contributes to the now growing interest in entrepreneurial-ecosystem studies by empirically linking individual entrepreneurial characteristics to innovation and performance of industries. Using leather as the ecosystem boundary, observations are made of individuals (who are premised as the worthy actors in entrepreneurship) in their role as principal players of firms which in turn have a value-system role in an industry. Thus, even though the unit of analysis does not shift from the firm/business/enterprise as is typical of entrepreneurship scholarship (due to industry nature and sampling limitations), the study does point towards the need to analyze and make conclusions at industry-ecosystem levels.

By establishing a causal link between entrepreneurial drive and performance through innovation in a factor-based industry such as leather, this study emphasizes the importance of applying entrepreneurship in realizing potential factor-advantages in economies especially in Africa. The shift towards innovation-driven industries in ability to fully exploit natural factors, ICT or knowledge advantages requires building and exploiting the entrepreneurial capacity of individuals, firms and entrepreneurial ecosystems.

Despite studying a group of firms that were representative of value-system roles in an industry ecosystem, the sample was too small to allow analysis at value-system role or (industry) ecosystem levels. Nonetheless it is the researcher's opinion that, analysis and conclusions made are relevant to value-system actors from an industry ecosystem perspective due to the heterogeneous nature of the sample. Thus, the factors empirically established as determinants of performance are relevant to not only the firm-level but can also find aggregate expression in value-system role, industry ecosystem and national levels of performance, whether economic, social or ecological.

5.5 Areas of Further Research

Entrepreneurial drive construct, its relationship with entrepreneurial outcomes such as innovation and performance, and the instrument developed here could be investigated further for reliability and validity. Entrepreneurial drive should be studied as a multi-dimensional individual phenomenon comprising cognitive and behavioural antecedents, that it determines innovation and performance outcomes of firms and industries. It urges reference to psychology for discerning of such concepts used in entrepreneurship literature as motivation versus action, alertness versus searching, pro-activeness versus pursuing, competitiveness versus competing, creativity versus creating, innovativeness versus innovating and innovation. This study recommends the use of cognitive and behavioural entrepreneurship variables as individual rather than firm-level dimensions. There is also a dearth of studies on entrepreneurial competence as a learned behaviour and the perspective adopted in this study invites more research to establish the construct's efficacy in theory and practice. Further studies are recommended on EO as a cognitive construct of entrepreneurship, in particular vision for growth as a variable in the EO construct.

Despite their empirically discernable nature from this study and theory, EO and EC did not show discriminant validity as factors in ED. Further studies could be carried out to establish the dimensionality of ED construct, whether it can be understood as a dichotomous construct or affirm this study that it is a uni-dimensional construct with cognitive and behavioural variables. Given their importance in scholarly literature, dimensions of vision for growth as an entrepreneurial orientation, and creating and networking, as entrepreneurial competencies, could be studied further to enhance our understanding of their role in the entrepreneurship process. Therefore, the inconsistencies between the study's empirical evidence and previous theoretical conjectures, particularly on dimensionality of ED, should be studied further. Structural equation modeling (SEM) could be applied in broader studies to further explore the relationships between the indicator variables, latent first-order, second-order and third-order factors and outcome variables of entrepreneurship as established in this study. SEM could validate the constructs used and strength of the causal relationships.

Beyond firm performance as an outcome of entrepreneurship, the link between an industry ecosystem and competitiveness especially in a global context could be explored and confirmed in order to guide policy and practice. This study contends that innovation should be explored and clearly distinguished as either an entrepreneurial disposition, action or outcomes for. Appropriate study designs (beginning with instrument construction) could be developed to study innovation as an outcome of entrepreneurship. Studies could further investigate the multi-dimensionality of the innovation variable using broad indicators that capture various typologies available in literature. The hypothesized mediation of innovation in the entrepreneurship-performance link should be studied further to establish the positive or negative effects.

Performance could be studied further as an outcome of cognitive and behavioural dimensions of entrepreneurship. Mixing positively- and negatively-worded measures where the latter are used as proxies of performance (such as changes in operating expenses, product defects and customer complaints as representatives of business cost efficiencies, product quality and customer satisfaction respectively) can result in otherwise inexplicable performance dimensions. Uniform positive measures are encouraged in determining dimensionality of performance.

The need for an ecosystem perspective for supporting individuals to behave entrepreneurially has been underscored by scholars in recent times. Entrepreneurship studies could also be carried out linking the individual to the industry as the unit of ecosystem performance. Despite recognition of industries as units of economic analysis and the role of entrepreneurship in resultant industry and economic performance, there is a dearth of empirical literature analyzing entrepreneurship at industry-level. There is need to show the link between individual entrepreneurial drive characteristics to the ecosystem and its competitiveness beyond firm-level innovation and performance outcomes.

Further research could validate the entrepreneurial drive construct, and its relationship with entrepreneurial outcomes in different contexts such as industries and economies or regions of the world. An attempt has been made to design the reflective indicator items to be industry and context neutral but the reliability in other contexts has not been tested. There is therefore the need to test the reliability and refine the measurement instrument further for applicability in cross-sectional and longitudinal studies in diverse industry, economic and cultural contexts.

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APPENDICES

Appendix I: Introduction Letter

To Whom It May Concern

REQUEST FOR RESEARCH

I am Simon Kamuri, a Doctorate student at Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi CBD Campus.

I am studying Entrepreneurship and would like to collect data from your business / organization for my research project. My thesis is on entrepreneurship and performance in the Kenyan leather industry.

I would greatly appreciate your participation providing data as guided by the research assistant / researcher using the attached questionnaire. The results of the research will be shared with the Kenya Leather Development Council (KLDC) for informing policy on the industry. It is therefore expected to contribute to the improvement of performance for individual businesses, support institutions and competitiveness of the industry as a whole. I would be greatly indebted to you and your business / organization for your participation in this research. I would be glad to share results of my study with direct participants upon request.

The information provided for this research will be treated with all confidentiality and used only for academic and policy guidance purposes.

I look forward to your kind participation.

Yours sincerely,

Simon Kamuri

Appendix II: Sample Letter Requesting Preliminary Data

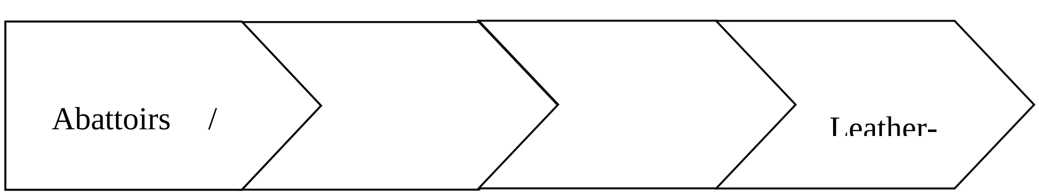
To: Kenya National Bureau of Statistics, Kenya Leather Development Council, Director of Veterinary Services,

Dear Sir / Madam,

REQUEST FOR DATA ON LEATHER INDUSTRY

I humbly request for data on the Kenyan Leather Industry for research studies and investment exploration purposes. I am a Doctoral student at Jomo Kenyatta University of Agriculture and Technology. I am interested in researching the leather industry in Kenya. My study will explore the relationship between entrepreneurship of industry players across the value-chain and industry performance. I am looking for preliminary information on the industry to form a solid proposal for my research and possible investment.

In particular, I am interested in a list that identifies the players in the value-chain and their performance in the last 2 – 3 years in terms of production quantities and / or value. Such a list would act as a sampling frame for my studies. From my industry overview, I have identified the value-chain players of interest to consist of Abattoirs, Traders, Tanners and Leather-goods Manufacturers. The value-stream is illustrated in the figure below:



Traders Tanners

Attached are copies of my national and college identification documents for your perusal.

Your kind assistance would be very much appreciated.
Yours faithfully

Simon Kamuri

Appendix III: Research Instrument

This questionnaire seeks to find out the relationship between entrepreneurship and performance in your industry. Information provided here will be treated with utmost confidentiality and used for academic purposes only. We thank you for taking time to answer the questions.

Instructions:

1. Read and complete one question at a time before proceeding to the next.
2. Please provide answers as they apply to your business and industry.
3. The questions ask you to rate the extent to which you agree or disagree with statement provided (i.e. an opinion on how the statement applies to you or your business).
4. Enterprise / industry-related business activities refer to your business in the leather industry.

Background Information: Questions on Respondent and Enterprise Background

Name of the enterprise / business____

Your name: ____

1. Gender: Male ☐ Female ☐
2. Your age in years (select appropriate age bracket)

18 – 24 ☐ 25 – 30 ☐ 31 – 35 ☐ 36 – 40 ☐ 41 – 45 ☐ 46 – 50 ☐ Above 50 ☐

3. Age of enterprise / business in years (select appropriate age bracket)

Below 5 ☐ 5 – 10 ☐ Above 10 ☐

4. Number of workers/staffs working in the enterprise (select appropriate number)

1 – 9 ☐ 10 - 49 ☐ 50 – 99 ☐ Above 100 ☐

5. State the value of total assets (investment made) in your enterprise / business (in Kenya Shillings):

Below 1 million ☐ 1 – 5 million ☐ Above 5 million ☐

6. Average annual turnover of the enterprise / business for the last three years (in Kenya Shillings):

Below 500,000 ☐ 500,000 – 5 million ☐ Above 5 million ☐

7. Please state your role in the enterprise or business:

Your Role:

Chief Executive ☐

☐

☐

☐

Owner/Owner manager

Strategic-level Manager

General/Line Manager

Please state the role your enterprise or business plays in the industry:

Industry Actor Role: Brief Explanation:

Producer (i.e. tanner) ☐ ____________________

Processor (e.g. manufacturer) ☐ ____________________

Delivery (supply/marketing/distribution/retail) ☐ ____________________

Industry networking support (e.g. association) ☐ ____________________

Regulator (policy formulation/enforcement) ☐ ____________________

Research / Knowledge accumulation (e.g. university) ____________________

Questions on Industry-related Entrepreneurship

1. Rate the extent you agree or disagree with the following statements about the vision and goals of your industry-related business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I can state my industry-related business goals right away					

b	I can state my industry-related business vision in terms of:					
I	Overall outcome					
Ii	Time period					
iii	Products					
Iv	Context					
V	How to measure					
c	I aim to improve my industry-related business activities in terms of:					
I	Product variety					
Ii	Product quantity					
Iii	Product quality					
Iv	Processes					
D	I know actions to take to reach my industry activity goals					

2. Rate the extent you agree or disagree with the following statements about the opportunities in your industry-related business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I know at least five sources of opportunities in my industry					
b	I know of at least five changes needed in the industry that would					

	improve stakeholder benefits					
c	I discover improvement opportunities in my business activities all the time					
d	I have a tendency to make improvements in my business activities					
e	I know the requirements for succeeding or changing performance in my business activities					
f	I try to meet new industry requirements that satisfy buyer or consumer needs					

3. Rate the extent you agree or disagree with the following statements about your risk taking in industry-related business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I take bold action by venturing into the unknown					
b	I am willing to invest a lot of time and/or money on something that might yield a high return					

c	I am willing to borrow heavily in order to sustain my business activities					
d	I tend to take risks in my business activities					
e	I consider the benefits before taking risks in my business activities					

4. Rate the extent you agree or disagree with the following statements about your pursuit of the following industry-related business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I search for industry-related information all the time					
b	I am continuously looking for new possibilities to improve my business activities					
c	I use at least five sources of information about opportunities in my business activities					
d	I am often the first to try new things and ideas in my business activities					
e	I take initiative to prevent challenges from reducing benefits ahead of competing industry actors					
f	I am not easily diverted from the business goals I set for myself					
g	I often negotiate with stakeholders for improvement in performance of my business					

h	I often negotiate with stakeholders to prevent losses in performance of my business					

5. Rate the extent you agree or disagree with the following statements about your networking in industry-related business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I have useful links with other actors in my industry					
b	I have useful links with other actors outside my industry					
c	I often exchange industry-relevant information with other industry actors					
d	I gain new knowledge or information on improving my business activities from other industry actors					
E	I share my knowledge or information on the industry practices with other industry actors					
F	I collaborate with other actors for value-addition in my industry-related business activities					

6. Rate the extent you agree or disagree with the following statements about creating in your business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	I am able to analyze or separate the main issues in my business activities and challenges					
b	I know how to describe problems in my business activities					
c	I can easily separate facts from opinions in my business activities					
d	I use ideas form different sources in developing new concepts for my business activities					
e	In making decisions about my business activities, I am able to see issues from different perspectives					
f	I come up with fresh or new ideas to address challenges in my business activities					
g	I synthesize / combine diverse information on solving problems in my business activities					

7. Rate the extent you agree or disagree with the following statements about changes introduced in your industry-related business activities:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a	New product offering					
b	New process (technologies, equipment, production methods or ways of serving customers)					
c	New organizational form (structures or links between internal business activities)					
d	New capability (to change, learn or adopt knowledge)					
e	New customers or markets					
f	New customer relationship or engagement (e.g. lock-in)					
g	New system interaction, collaboration or partnership with external stakeholders (e.g. suppliers, distributers, customers or competitors)					
h	New revenue generation practices					
I	New cost structures					

8. Show how the following performance areas of your industry-related business activities have changed in the last five years using the following notations:

+ = INCREASE in performance

0 = NO CHANGE in performance

- = DECREASE in performance

		2012	2013	2014	2015	2016
a	Net profit (Ksh.)					
b	Sales turn-over (Ksh.)					
c	Market share (percentage)					
d e	Production quantity (units) Productivity (input/output)					
f	Product variety (number)					
g	Operating expenses (Ksh.)					
h	Product defects (number)					
i	Customer complaints (number)					

Appendix VI: Nairobi-based LAEA Members List

LEATHER ARTICLES ENTREPRENEURS ASSOCIATION (LAEA)

No	Company Name	Contact Person	Designation	Email
1	Ashieng Footwear Ltd	Samuel Osembo	Fabrication and Production Director	samuelosembo@yahoo.co.in
2	Brasbuckle Ltd	Bedan Kimeria Muraya	Managing Director	brasbuckle@yahoo.com
3	Cha-tunu Afric Limited	Catherine Nyoike	Director	cathynyoike@yahoo.com
4	Crown Industries Ltd	Vijay	Manager	sales@crowindustries.org
5	Dog Bones Ltd	Ashwin Punja	Director	ashwin@dogs-b.com
6	International African Merchants	Alice Njoroge	Marketing Officer	
7	Mohazo Limited	Zohra Baraka	CEO & Founder (AWEP)	zohra@awepkenya.org
8	Rift Valley Leather	Robert Topping/Zadock	Managing Director	zadock@riftvalleyleather.com
9	Sandstorm Kenya	Mark Stephenson	Managing Director	mark@sandstormkenya.com
10	United Footwear Ltd	R. K. Shah	Managing Director	
11	Urban Artefacts	Nicola Hankey Onyango	Managing Director	nicolahankey@yahoo.com
12	Akalla Sandals Manufacturer	Joanes Mbala Onyango	Director	
13	Aprelleduany	Aprelle Duany	Managing Director	aprelle@aprelleduany.com
14	Blackfly Designs	Ruth Abade	Owner	ruth@blackfly.co.ke
15	Elneagle EM Limited	Maurice Omondi	Director-Operations	omaurice5577@yahoo.com
16	Kariokor Syondo Women Jua Kali Association	Patricia Mwende	Board Member	patpeetes2009@gmail.com
17	Katchy Kollections	Jennifer Mulli	Head Designer	katchy.kollections@gmail.com
18	Khan Limited	Farooq Khan	Director	
19	Leather Masters Ltd	Idris Rupani	Managing Director	idrisrupani@yahoo.com
20	Leathertech	James Maina Kihato	Director	
21	Maridadi Seasons Enterprises	Robert Katana Wanje		giftshop.oldtown@gmail.com

22	Nalina Ltd / Adelphi The Leather Shop	Nalina Rupani	Managing Director	info@adelphileather.biz
23	Palm Print Artifacts	Jacob Mwangi	Sales Manager	jacobmithamo33@gmail.com
24	Sanabora Design House Limited	Anne Moraa	Production Manager	ann.moraa@sanabora.com
25	Suave Kenya Limited	Mohamed O. Awale	Founder	mohamed.awale001@gmail.com
26	Wazawazi Co. Limited	Chebet Mutai	Managing Director	chebet@wazawazi.co.ke
27	Zeeban Design	Yonathan Tadiwos	Director	zeeban@gmail.com
28	African Lily	Madeleine Ambrosino		africanlily enterprises@gmail.com
29	Afrika Pamoja Crafts	Joab Othatcher	Director	sales@afrikapamoja.com
30	Alive + Kicking (K)	Richard Gituro	Sales Manager	rgituro@gmail.com
31 32	Anzuki Recycle Designers Bombolulu Workshop for the Physically Handicapped	Mike Nzuki Esther Mwanyama		mikenzuki@yahoo.com estherm@apdkcoast.com
33	Champion Shoes	James Mwaura	Director	jamesmm55@hotmail.com
34	Curio city Africa	Vivian	CEO	viviankamba@gmai.com
35	Escon Leather Creations	Esther Nzau		
36	FlyEagle Ltd.	Maurice Omondi		omaurice5577@yahoo.com
37	Gonzala Leather Creations	Gabriel		anzalaof@gmail.com
38	Guagnai Trading Co. Limited	Stephen Mutindwa	Business Development Manager	vealuxx@gmail.com
39	Habib LeatherIndustry	Rafique Butt		habibleatherindafrica@yahoo.com
40	Happy and Cheap Crafts	Geofrey Kamau Ngigi	Owner	ngigikamau22@gmail.com
41	Hawi Creations			
42	Kikoy Mall EPZ Ltd	Sajaad Alibhai	Director	sajaad@kikoymall.com
43	Lulea	Edmond Chesnean	Founder	edmond@luleabychesnean.com
44	Lyntak Investment	Carol Makena		rylinemk@yahoo.com
45	Maridadi Seasons Enterprises	Robert Katana Wanje		giftshop.oldtown@gmail.com
46	Merit Marketing Services	Samuel Njoroge Mwangi	Managing Director	merrit21@yahoo.com
47	Mizizi Africa	Nduku Kyule		mziziafrika@gmail.com
48	Nyoma Traders	Clement Arwings Arua	Director	kodhek2001@yahoo.com
49	Option One Limited	Sarah Karungu	Director	sarahnk2000@gmailcom
50	Orion EPZ Limited	Ruo Maina	Managing Director	ruo@orioneastafrica.co.ke
51	Preca Limited	Daniel Kinuthia		danielkinuthia206@gmail.com
52	Santa Teresa Shoes Ltd	Dionanca Shah Mwadilu	Director	
53	Shop at Adora	Linda Obilo	Owner	shopatadora@gmail.com
54	Ternaco Investments	Rehab Kenana	Director	rkenana@yahoo.com

55	The Palm Prints	Paul M. Mwangi		
56	Thlokomelo Designs	Paulina Mokhothu	Director	paulina.makhothu@gmail.com
57	Zamoyo Ltd	Larrisa Muthoni	Founder	larrissa@zamoyo.com
58	Zani International	Christine Mwende	Director	muindichris@gmail.com

Appendix IV: Research Authorization

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: 020 400 7000,
0713 788787,0735404245
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/17/84942/20139**

Date: 22nd November, 2017

Simon Kamuri Kamuri
Jomo Kenyatta University of
Agriculture & Technology
P.O. Box 62000-00200
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Influence of entrepreneurial drive on performance of value-system actors in the leather industry in Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **All Counties** for the period ending **20th November, 2018.**

You are advised to report to **the County Commissioners and the County Directors of Education, All Counties** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

GP Kalerwa

GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioners
All Counties.

The County Directors of Education
All Counties.

National Commission for Science, Technology and Innovation isISO9001:2008 Certified