Understanding Entrepreneurial Competence, Innovation and Performance

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Abstract

Entrepreneurship continues to be important in factor-based industries such as leather in Africa. It has been mooted as an area of intervention in Kenya, where the leather industry has unrealized potential and is faced with globalized competition. Meanwhile, entrepreneurial competence (EC) is a less studied concept in the African region. The purpose of this paper was to establish the relationship between EC as a behavioural construct, innovation and performance from an industry ecosystem perspective. It was based on an analysis of entrepreneurial behaviours of key informants from value-system actors of Kenya's leather industry and the expected business outcomes of innovation and performance. The study applied a cross-sectional survey of actors in diverse industry value-system. Mixed sampling was carried out of members of Leather Articles Entrepreneurs Association (LAEA) and associated value-system actors as industry representatives. Fifty-two responses were found to be valid for analysis with a 76% response rate. SPSS v27 was used for exploratory and inferential analysis to establish validity of constructs and their relationship. Factor analysis showed entrepreneurial competence was a multi-dimensional second-order latent construct comprising three sub-variables, namely pursuing, networking and creating. The study found that both entrepreneurial competence and innovation determined performance. Further, innovation did not mediate the entrepreneurial competence-performance link. This study affirmed earlier research on entrepreneurial competence as a behavioural construct but did not confirm a mediating role of innovation in entrepreneurial competence-performance link. Enhancement of entrepreneurial competence and innovation of value-system actors in an industry ecosystem can improve business performance. Further research in different contexts is recommended on the factors and methods applied here.

Key words: *entrepreneurial competence, networking, pursuing, creating, innovation performance, value-system actors, leather industry, entrepreneurial ecosystems*

1. Introduction

Kenya's leather industry shows typical industry ecosystem characteristics with value-system roles played by tanners as producers, leather suppliers as delivery agents, leather goods manufacturers as processors, industry network associations, a regulator and research agents (Hansen, Moon & Mogollon, 2015). The industry is also dominated by micro, small and medium enterprises (MSME's) whose performance is poor (Mwinyihija, 2016). Despite raw material access and

market potential, the industry is underperforming in Africa, Kenya and the Common Market for East and Southern Africa region (COMESA). This is partly attributed to globalized competitive pressures (MOIT&C, 2016; UNIDO, 2010; Dinh & Clarke, 2012; Banga, Kumar & Cobbina, 2015).

In the face of the foregoing paradox, entrepreneurship has been seen as crucial in determining the competitiveness and therefore performance of firms, industries (and economies) in this dynamic global economy (Audretsch, 2007; Acs, Szerb & Autio, 2015). 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. Hansen *et al.* (2015) and Mwinyihija (2016) have said it is important to develop innovation and entrepreneurship, especially in the manufacturing end of the leather value-chain, in order to create competitive advantages for Kenya's leather industry. Thus, understanding the role of entrepreneurial characteristics such as entrepreneurial competence especially in the context of an industry ecosystem is very important. This study therefore explored entrepreneurial competence as a construct and its relationship with innovation and performance in a survey of Kenya's leather industry as an entrepreneurial ecosystem.

2. Research Objectives

This research set out to investigate the relationship between entrepreneurial competence and the outcomes of innovation and performance amongst value-system actors in Kenya's leather industry. The specific objectives were:

1. To determine the relationship between entrepreneurial competence and performance of value-system actors in Kenya's leather industry.
2. To determine the mediating effect of innovation by value-system actors in the relationship between entrepreneurial competence and performance in the leather industry in Kenya.

3. Theoretical Perspectives on Study Variables

3.1 Entrepreneurial Competence

Literature on the study of entrepreneurship shows account taken of the entrepreneur, processes and outcomes at enterprise (or micro) and the economy (or macro) levels (Jain, 2011; Busenitz, Plummer, Klotz, Shahzad & Rhoads, 2014). However, constructs of entrepreneurship at individual level, especially entrepreneurial competence, have lacked a solid foundation in theory, such as when dispositions and behaviours are lumped together (Mitchelmore & Rowley; 2010, Jain, 2011). A systematic review of literature on entrepreneurial competence by Tittel and Terzidis (2020) found that there is no consensus or clarity of the concept amongst entrepreneurship scholars, with a mix of competences, skills, traits and other constructs relevant for entrepreneurial action presented. 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; Mitchelmore & Rowley, 2010). Entrepreneurial competencies are seen as crucial for business start-up, growth and success. Therefore understanding entrepreneurial competence is important in entrepreneurship practice, research,

policy and ultimately competitiveness and economic development (Kaur & Bains, 2013: Mitchelmore & Rowley, 2010).

Jain (2011) listed well established entrepreneurial motivation and individual characteristics as entrepreneurial competencies. But competencies are learned, and not all personal traits are learned. Similarly, individual attributes by Man, Lau and Snape (2008), namely opportunity, relationship, analytical, innovative, operational, human, strategic, commitment, learning and personal strength are too wide a list and not all can be learned or developed. Despite relying on mixed cognitive and behavioural measures (in this case the entrepreneur's skills and personality) like other scholars, Barazandeh, Parvizian, Alizadeh and Khosravi (2015) point out that competencies are mostly skills that can be improved, and which have an indispensable causal relationship with business performance. 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. Lans, Verstegen, and Mulder (2011) identified Analyzing, Pursuing and Networking as the entrepreneurial competencies to be learned and developed in small firms (agri-based). Lans *et al.* (2011) three-factor model of entrepreneurial competence is empirically supported by theoretical literature is adapted for this study as a basis for defining entrepreneurial competence.

Lans *et al.* (2011) analyzing factor is considered as part of a creative process, and creativity as an important aspect of innovation, and therefore of entrepreneurship (Bjerke, 2007). 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. Pro-activity or initiative are seen as expressed in the competence dimension of pursuing based on measurement items used in proactivity, initiative and pursuing (Baron & Ensley, 2006; Shaban, 2014; Lans *et al.*, 2011).

3.2 Innovation

Innovation is the creation of new user value from ideas and opportunities (Bjerke, 2007; Kuratko, 2014). It is therefore an individualized phenomenon with broader outcomes when applied in entrepreneurship. Innovation is seen as both an outcome of entrepreneurship and a mediator of entrepreneurial performance. 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.

Carayannis and Provance (2008) assert that in finding indicators for measurement of innovation should include not only input and output (product / patent) variables, but also indicators of process (e.g. efficiency) and qualitative value. 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. This study adapted ten types of innovation discussed by Keeley *et al.* (2013), ranging in focus from internal to external in terms of distance from customer experiences, as indicators of the variable.

Dinh and Clarke (2012) found a positive correlation between firm innovation activities and performance in manufacturing firms, especially introduction of new products and new customer delivery systems, and 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).

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, Sadati, Delavari, Mehdivand and Mihandost (2011). Kraus, Rigtering, Hughes and Hosman, 2012) found that innovativeness in Dutch SMEs has a significantly positive relationship with business performance when moderated by market turbulence. One can therefore premise that entrepreneurial competence, which involved creating new user value is antecedent to innovation (Bjerk, 2007), and that both determine firm performance.

3.3 Performance of Value-system Actors

Performance is seen as an outcome of entrepreneurial activity and is measured using economic, social and environmental benefits to stakeholders. These benefits are often measured at firm level and include financial and non-financial measures of business results such as profitability, market share, growth, stakeholder satisfaction (Lumpkin & Dess, 2001; Rauch *et al.*, 2009; Stephan, Hart & Drews, 2015). Barazandeh *et al.* (2015) observe that performance measures used by scholars can be divided into financial and non-financial. Financial measures include financial efficiency and profit, working capital growth as indicators while non-financial ones include customer satisfaction, sales growth, employee growth, market share, export and innovation. 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.

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.

Mekonnen, Mudungwe and Mwinyihinja (2014) 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. 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. This study adopts a conservative nine measures of firm performance that include economic, production, productivity and social indicators.

3.4 Critique of Existing Literature on Entrepreneurship in Industry Ecosystems

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) description of entrepreneurship in terms of fourteen pillars in three categories – entrepreneurial attitudes, abilities and aspirations - is reflective of this need to delineate cognitive dispositions from competencies in entrepreneurship, such as when opportunity perception and start-up skills are classified as entrepreneurial attitudes.

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. Tornau and Frese (2013) recommend further research into the relationship between proactivity – here associated with the concept of pursuing – and business-related performance. There is also 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).

2. Research Hypotheses

From the objectives of the study and the review of theoretical literature, the following research hypotheses were formulated:

1. **H_{a1}:** Entrepreneurial competence determines performance of value-system actors in Kenya's leather industry.
2. **H_{a2}:** Innovation mediates the relationship between entrepreneurial competence and performance of value-system actors in Kenya's leather industry.

3. Research Method

The study was a cross-sectional survey that adopted mixed design involving exploration of factors and diagnosis of relationships between them in Kenya's leather industry (Kothari & Gaurav, 2014; Bless, Higson-Smith & Kagee, 2006). A heterogeneous population of 68 value-system actors comprising members of the Nairobi-based Leather Articles Entrepreneurs Association (LAEA) and associated industry support institutions was studied. Mixed sampling was applied involving a census fifty-eight LAEA members, with the membership list forming the primary sampling frame, and snowballing from 10 industry support institutions. Diverse value-system actor roles such as processors, delivery agents, industry network associations, regulators and research agents were studied as described by Hansen *et al.* (2015). Quantitative data was collected during the main field study using a questionnaire for guided interviews. Data was collected in April – June 2018 by the researcher and an assistant from respondents at their premises and during an industry-networking meeting.

The questionnaire used adapted items from previous studies. Entrepreneurial competence measures relied on a study by Lans *et al.* (2011). Measures for innovation were adapted from Keeley *et al.* (2013) while performance items were adapted from the work of various scholars (Santos & Barito, 2012; Ming & Yang, 2009; Al-Ansari, 2014; Stephan *et. al.*, 2015). Instrument reliability was established using the Delphi Technique from opinions of nine doctorate-level students and lecturers as experts in entrepreneurship. Data collection was preceded by a pilot test that established reliability of the instrument from seventeen respondents giving an overall Cronbach's Alpha value of the indicator items ranging from 0.701 to 0.919, which was well within the 0.7 acceptance levels (Garson, 2012). Reliability results for the study variables are presented in Table1. The entrepreneurial competence variable had twenty-one measurement items in three sub-variables (pursuing had 8, networking had 6 and creating with 7 items) as adapted from Lans *et al.* (2011). The innovation and performance variables had nine items each as developed from literature.

Responses of the independent and mediating variables were coded on a five-point Likert scale showing the level of agreement with measurement items ranging from strongly agree (5) to strongly disagree (1). Average scores were obtained from indicator items and latent variables to obtain indices for first-order and second-order variables (Neuman, 2009). The dependent variable was measured using pluses (+) and minuses (-) to show changes in performance over five years. These responses were coded on a five-point Likert scale ranging from a Large increase (5), no change (3) to a large decrease (1) in performance. 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. Fifty-two valid questionnaires were obtained for analysis giving a response rate of 76%.

Data analysis applied Statistical Package for Social Sciences (SPSS) v.27 for reliability analysis of pilot study results, followed by descriptive statistics, exploratory and inferential analysis using the main study data. Exploratory Factor Analysis (EFA) using the Principal Component Analysis method with Promax rotation was performed to establish construct validity (Yong & Pearce, 2013). Inferential analysis involved regression of the independent (entrepreneurial competence) and

mediator (innovation) variables on the independent (performance) variable as established from factor analysis, and estimating the strength of their relationships.

Exploratory factor analysis accepted indicator loadings of above 0.5 for showing that the constructs contribute over 50% of the indicator's variance. Entrepreneurial competence was conceptualized from theoretical postulations and factor analysis as a multidimensional concept measured by pursuing, creating and networking. Inferential analysis involved formation of first and second order constructs, tests for correlation and statistical assumptions, and multiple linear regression in testing for mediation. The coefficient of determination (R^2) of the accepted constructs showed the explanatory power of the independent constructs on the dependent variable, and therefore how well the statistical model fits the theoretical postulations. Significance levels of $p<0.5$ for regression statistics showed the construct's positive or negative effect on the target variable directly or via an intervening variable.

4. Reliability Analysis

Cronbach's Alpha was used to test reliability of the proposed constructs and the measurement items' ability to produce consistent results. Reliability results indicated that performance had a coefficient of 0.807, Pursuing had a coefficient 0.703, creating had a coefficient of 0.892, Networking had a coefficient of 0.877, innovation had a coefficient of 0.846 and entrepreneurial competence had a coefficient of 0.925. According to Mugenda and Mugenda (2003) a coefficient of 0.70 or more implies high degree of reliability of the data. All the factors showed that the Cronbach's Alpha were above the required coefficient of 0.70 thus the measurement items were highly reliable as indicated in Table 1.

Table 1: Reliability Results for the Study Variables

Variable	Cronbach's Alpha
Pursuing	.703
Creating	.892
Networking	.877
Innovation	.846
Performance	.807
Entrepreneurial Competence	.925

5. Research Findings and Discussion

Respondents were leaders as key-informants of value-system actors in the industry. This included value-system actors in all roles of producers (tanners at 5.8%), delivery agents (leather suppliers at 19.2%), processors (leather articles manufacturers at 65.3%), as well as support roles such as industry association (LAEA and Cobblers Association officials at 3.8%), Policy and Regulation

(Kenya Leather Development Council at 1.9%), and Research (the Kenya Industrial Research and Development Institute and the Training and Production Center for the Shoe Industry at 3.8%) (Hansen *et al.* 2015). Seventy-three percent of respondents as decision makers of value-system actor enterprises identified themselves as owner managers. At 55.8%, the respondents' firms had employed less than 10 workers and could be classified as micro-enterprises according to the Kenyan Micro and Small Enterprises Act of 2012 (RoK, 2012). Respondents were seventy-three percent male and 46% were 25 – 40 years of age.

5.1 Factor Analysis for Entrepreneurial Competence

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for entrepreneurial competence (EC) variable 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). Based on Kaiser Criterion, three factors were imputed out of a total 11 factors. The cumulative variability explained by these three imputed 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 performance of value system factor solution (Hair *et al.*, 2014).

As shown in Table 2, the pattern matrix shows the first component was pursuing that had three items (PFocus, Pcompetiveness and Popportunities) whose factor loadings ranged from 0.599 to 0.857. The second component was networking that had five items (NIndustry, NOutside, NExchange, NShared and NCollaboration) whose factor loadings ranged from 0.618 to 0.804. The third component was creating that had three items (CSources, CIdeas and CSynthesis) whose loadings ranged from 0.753 to 0.927. The entrepreneurial competence variable showed multi-dimensionality comprising Pursuing, Networking and Creating as first-order latent variables in line with theoretical arguments and conception. Entrepreneurial competence (EC) can therefore 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 (Lans *et al.*, 2015; Sahban *et al.*, 2014; Santos *et al.*, 2015).

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 2: Pattern Matrix for Entrepreneurial Competence

	Pursuing	Networking	Creating
Pursuing			
PFocus	.599		
Pcompetiveness	.692		
Popportunities	.857		
Networking			
NIndustry		.725	
NOutside		.804	
NExchange		.790	
NShared		.618	
NCollaboration		.685	
Creating			
CSources			.927
CIdeas			.753
CSynthesis			.818

5.2 Factor Analysis for Innovation

At 0.720 above the 0.6 threshold for the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (Kaiser, 1974), and a significant Bartlett's Test of Sphericity (χ^2=199.682, 36 df, p<0.05) (Bartlett, 1954), the data on innovation indicated suitability for factor analysis. Based on Kaiser Criterion, two factors were extracted out of a total nine indicators with the initial solution greater or equal to 1.0. The two factors were able to explain 60.542% of the total variance of the innovation factor (Hair *et al.*, 2014).

As shown in Table 3, the pattern matrix shows the first component had four items (InnovProducts, InnovMarkets, InnovCustEngagement and InnovProcesses) whose loadings ranged from 0.607 to 0.888. The second component had five items (InnovOrgForm, InnovCapabilities, InnovSystInteraction, InnovRevenues and InnovCosts) whose factor loadings ranged from 0.578 to 0.871. Innovation can therefore be understood as a dichotomous or multi-dimensional variable. The first component can be seen as having items measuring the business-customer interface, which are changes associated with products and customers. The second component of the innovation variable comprises items measuring how the business is modeled in terms of business system or concept and are associated with business model, structure or administrative innovation.

The multi-dimensionality of innovation is supported by theoretical and empirical studies (Clauss, 2016; Bashir *et al.*, 2017). 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 customer-interface / content changes and system / configuration changes.

Table 3: Pattern Matrix for Innovation

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

5.3 Factor Analysis for Performance of Value-system Actors

At 0.76 above the 0.6 threshold for the Kaiser Criterion for measuring sampling adequacy (Kaiser, 1974), and a significant Bartlett's Test of Sphericity (χ^2=325.913, 36 df, p<0.05) (Bartlett, 1954), the data on performance indicated suitability for factor analysis. Two factors were extracted out of a total nine indicators measuring performance. The two factors were able to explain 71.853% of the total variance of the entrepreneurial competence factor solution (Hair *et al.*, 2014).

The pattern matrix in Table 4 shows the first component had six items (BusPerformProfit, BusPerformSales, BusPerformShare, BusPerformQuantity, BusPerformProductivity and BuPerformVariety) whose factor loadings ranged from 0.632 to 0.949. The second component had

three items (BusPerformExpenses, BusPerformDefects and BusPerformComplaints) 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, Wiklund, Lumpkin and Frese, 2009; Jain, 2011; Sanchez, 2012; Al-Ansari, 2014; Kraus *et al.*, 2012; Ndubisi *et al.* 2012; McMullan *et al.*, 2015; Mekonnen *et al.*, 2014).

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 stated with negative or undesirable performance outcomes (reduction in business expenses, defects and customer complaints) converged as a separate dimension. Negatively stated measurement items were proxies of respective desirable performance measures. Expenses were used as an indirect measure of operational and financial performance efficiencies, product defects as a proxy measure of product quality and customer complaints as a proxy for stakeholder (in this customer) satisfaction.

Table 4: Pattern Matrix for Performance of Value-system Actors

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

6. Correlation Analysis

Table 5 gives the correlation analysis between the dependent variable and pursuing, creating, networking, entrepreneurial competence and innovation. As indicated, there is a positive and a significant relationship between performance and entrepreneurial competence. There is a positive and a significant relationship between pursuing and performance. A strong and a positive relationship exists between creating and performance. A strong and a significant relationship is evident between performance and networking. Innovation has a positive and a significant

relationship with performance. Therefore, we can conclude that entrepreneurial competence significantly predicts performance.

Table 5: Correlation Analysis

		Performance	Entrepreneurial Competence	Pursuing	Creating	Networking	Innovation
Performance	Pearson Correlation	1					
	Sig. (2-tailed)						
Entrepreneurial Competence	Pearson Correlation	.654**	1				
	Sig. (2-tailed)	.000					
Pursuing	Pearson Correlation	.491	.379**	1			
	Sig. (2-tailed)	.000	.006				
Creating	Pearson Correlation	.443**	.798**	.642**	1		
	Sig. (2-tailed)	.001	.000	.000			
Networking	Pearson Correlation	.305*	.620**	.706**	.702**	1	
	Sig. (2-tailed)	.028	.000	.000	.000		
Innovation	Pearson Correlation	.638*	.798*	.234	.610*	.442*	1
	Sig. (2-tailed)	.000	.000	.095	.000	.000	

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

*. Correlation is significant at the 0.05 level (2-tailed).

7. Test for Statistical Assumptions

Assumptions of normality, multi-collinearity and heteroscedasticity were tested to establish suitability of the data for linear regression and statistical modeling (Garson, 2012; Fraznco and Farmer, 2014). Results of the tests for statistical assumptions are presented in this section.

7.1 Test for Linearity between Study Variables and Performance

The test for linearity was conducted using the ANOVA test for deviation from linearity. As indicated in Table 6, all the variables had a linear relationship with the dependent variable,

performance. Having *p*-values greater than the level of significance of 0.05 shows the variables have a linear relationship with the dependent variable (Garson, 2012).

Table 6: Test for linearity

Variable	Deviation from Linearity p-value
Innovation	.115
Entrepreneurial Competence	.544
Networking	.211
Pursuing	.620
Creating	.584

7.2 Test for Normality for Performance

Table 7 gives the test for normality done using the Kolmogorov-Sminorv test and the Shapiro-Wilk test. These tests are used to check normality of data, Razali & Wah (2011). The null hypothesis for the test is that performance is normally distributed against the alternative that it is not normal in distribution. The *p*-value is bigger than the level of significance, hence we fail to reject the null hypotheses and conclude that the data has a normal distribution.

Table 7: Test for Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual	.109	52	.177	.978	52	.443

7.3 Test for Heteroscedasticity

Table 8 gives the results of the tests for heteroscedasticity done using the Breusch-Pagan test. These test is used to check for constant variance, (Breuch & Pagan, 1979). The null hypothesis for the test is that performance has constant variance against the alternative that the performance has no constant variance. The *p*-value is bigger than the level of significance, hence we fail to reject the null hypotheses and conclude that performance has constant variance.

Table 8: Test for Heteroscedasticity

	Breusch-Pagan		
	Statistic	df	Sig.
BP	.81944	2	.6638

7.4 Multicollinearity Test

To test for multicollinearity, the Variance Inflation Factor was used. As indicated in Table 9, all the coefficients are below 10 hence, we conclude that there is no presence of multicollinearity between the independent variables (Alin, 2010).

Table 9: Multicollinearity test

	Collinearity Statistics	
	Tolerance	VIF
Pursuing	.803	1.246
Creating	.511	3.420
Networking	.493	2.209
Innovation index	.354	2.821
Entrepreneurial Competence	.196	5.108

8. Test for Hypotheses

Linear regression was applied to test the hypotheses on the relationships between entrepreneurial competence, innovation and performance. Entrepreneurial competence as a second-order variable was regressed on performance and results interpreted using adjusted R^2 values and *p*-values at $p<0.05$ significance level (2-tailed). Baron and Kenny's causal step analysis for mediation (Kenney, 2016) was used to test the mediating effect of innovation on the entrepreneurial competence and performance link.

8.1 Relationship between Entrepreneurial Competence and Performance of Value-system Actors

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

H_{01}: Entrepreneurial competence determines performance of value-system actors in Kenya's leather industry

H_{a1}: Entrepreneurial competence determines performance of value-system actors in Kenya's leather industry

The model summary of the relationship between entrepreneurial competence and performance is presented in Table 10. The adjusted R-squared coefficient is 0.416, implying that 41.6% of the performance is explained by entrepreneurial competence.

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654[a]	.427	.416	.66193

The overall significance of the model is presented in Table 11. The observation made from the table is that since the *p*-value 0.000 is bigger than the alpha level of significance we conclude that the overall model is significant in explaining the relationship between performance and entrepreneurial competence. Therefore, the t-statistics and *p*-values can be reliably used to test the significance of coefficients in the model.

Table 11: ANOVA Table

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	16.347	1	16.347	37.310	.000[b]
	Residual	21.908	50	.438		
	Total	38.255	51			

Table 12 gives the model coefficients resulting from the regression analysis. The results show that a unit increase in entrepreneurial competence increases the performance of value-system actors in Kenya's leather industry by 0.884 units. Since coefficient is positive, this indicates that we have a positive and a significant relationship between entrepreneurial competence and performance. The regression model equation obtained from these results is:

Performance = 0.561 + 0.884 Entrepreneurial Competence

Table 12: Table of Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	.561	.571		.982	.331
	Entrepreneurial Competence	.884	.145	.654	6.108	.000

When analyzed as a third-order latent variable, entrepreneurial competence determines up to forty-six percent of performance of value-system actors, with the rest being determined by exogenous factors. 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, Parvizian, Alizadeh & Khosravi, 2015). The results were therefore consistent with theoretical and empirical literature on the effects of entrepreneurial competence on firm performance.

8.2 The Mediating Effect of Innovation on the Relationship between Entrepreneurial Competence and Performance of Value-system Actors

The second objective was to determine whether innovation mediates the relationship between entrepreneurial competence and the performance of value-system actors in leather industry in Kenya. The following null hypothesis formulated:

H_{02}: Innovation *does not* mediate the relationship between entrepreneurial competence and performance of value-system actors in Kenya's leather industry.

H_{a2}: Innovation mediates the relationship between entrepreneurial competence 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. Table 12 shows results of the first of the four-step process in testing for mediation, whereby entrepreneurial competence determines performance of value-system actors.

8.2.1 Relationship between Entrepreneurial Competence and Innovation by Value-system Actors

Table 13 gives the model summary of the relationship between entrepreneurial competence and innovation. The coefficient of adjusted R-squared is 0.630 implying that 63% of innovation can be explained by entrepreneurial competence while the rest is explained by the error term.

Table 13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798[a]	.637	.630	.58374

To test for overall significance of the model, the ANOVA results are presented in Table 14. The *p*-value is less than the level of significance hence we conclude that the model is significant. Thus, it can be used to determine the relationship between entrepreneurial competence and innovation.

The t-statistics and *p*-values can therefore be reliably used to test the significance of coefficients in the model.

Table 14: ANOVA Table

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	29.938	1	29.938	87.858	.000[b]
	Residual	17.038	50	.341		
	Total	46.975	51			

Table 15 gives the model coefficients of the relationship between entrepreneurial competence and innovation. A unit increase in entrepreneurial competence increases the innovation by 1.196 units. Therefore, entrepreneurial competence has a significant influence on innovation by value-system actors in Kenya's leather industry at $p<0.05$ level of significance. The regression equation obtained from this output is:

Innovation = -0.033 + 1.196 Entrepreneurial Competence

Table 15: Table of Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.033	.503		-.065	.948
	Entrepreneurial Competence	1.196	.128	.798	9.373	.000

8.2.2 Relationship between Innovation and Performance of Value-system Actors

Table 16 gives the model summary for the relationship between innovation and performance. As indicated the coefficient of adjusted R-squared is 0.395 implying that innovation was able to explain 39.5% of performance of value-system actors in Kenya's leather industry while the rest is explained by the error term.

Table 16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638[a]	.407	.395	.67371

Table 17 depicts the overall significance of the model. The *p*-value is less than alpha level of significance and thus we conclude that the model is significant. Therefore, the t-statistics and *p*-value can be used to determine the relationship between innovation and performance. The regression equation obtained from this output is:

Performance = 1.340 + 0.576 Innovation

Table 17: ANOVA Table

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.561	1	15.561	34.284	.000[b]
	Residual	22.694	50	.454		
	Total	38.255	51			

The coefficients of the model are presented in Table 18. This indicates that a unit increase in innovation increases performance by 0.576 units. There is a positive and a significant relationship between innovation and performance of value-system actors in Kenya's leather industry. Thus innovation is a predictor for performance at $p<0.05$ level of significance.

Table 18: Table of Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.340	.464		2.888	.006
	Innovation index	.576	.098	.638	5.855	.000

8.2.3 Relationship between Entrepreneurial Competence and Innovation on Performance of Value-system Actors

Table 19 gives the model summary on the relationship between entrepreneurial competence, innovation and performance. As indicated the coefficient of adjusted R-squared is 0.443 implying that 44.3% of performance of value-system actors in Kenya's leather industry is explained by entrepreneurial competence and innovation.

Table 19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.681[a]	.464	.443	.64666

To test for overall significance of the fitted model, the ANOVA results are presented in Table 20. The *p*-value is less than 0.05 hence we conclude that the model is significant and can be used to determine the relationship between performance, innovation and entrepreneurial competence.

Table 20: ANOVA Table

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	17.765	2	8.882	21.241	.000[b]
	Residual	20.490	49	.418		
	Total	38.255	51			

Table 21 gives the coefficients of the fitted model. There is a positive and a significant relationship between entrepreneurial competence and performance. A unit increase in entrepreneurial competence increases the performance by 0.539 units. In addition, there is a positive and a non-significant relationship between innovation and performance. Therefore entrepreneurial competence increases performance of value-system actors in Kenya's leather industry. However, the multiple linear regression results showed that innovation did not have a significant influence in the performance of value-system actors in Kenya's leather industry. The regression equation obtained from this output is:

Performance = 0.570 + 0.539 Entrepreneurial Competence

Table 21: Table of Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	.570	.558		1.022	.312
	Entrepreneurial Competence	.539	.235	.399	2.296	.026
	Innovation	.288	.157	.320	1.841	.072

Steps 1, 2 and 3 show a direct relationship between entrepreneurial competence and innovation as predictors, and performance as a predicted variable. Entrepreneurial competence was a predictor of both performance (Step 1) and innovation (Step 2), while and innovation was established as an independent determinant of performance (Step 3). Step 4 showed that innovation was not a significant predictor of performance when regressed together with performance. Lack of significance of the mediator innovation variable in Step 4 showed that the mediation effect of innovation on the entrepreneurial competence-performance link is not supported. These results therefore support acceptance of the null hypothesis and rejection of the research hypothesis at $p<0.05$ level of significance. Therefore innovation does not mediate the relationship between entrepreneurial competence and performance.

Despite not distinguishing cognitive and behavioural characteristics of entrepreneurs (in a study that labeled 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. Various scholars have found that innovation has a significant direct relationship with attributes of entrepreneurial performance and that it mediates the entrepreneurship-performance relationship (Madhoushi *et al.*, 2011; Kraus *et al.*, 2012; Ndubisi *et al*., 2012; Kollman *et al.*, 2012; Al-Ansari, 2014). While using unique measures for the construct, namely strategic, opportunity and organizing competencies, Mohamed, Ibrahim and Shah (2017) asserted that entrepreneurial competence was an execution ability. Mohamed *et al.* (2017) found that entrepreneurial competence variables had a significant ($p<0.01$) determinant effect on performance women-owned businesses in Nigeria. Despite consistent empirical evidence to the contrary, this study did not support the mediation of innovation in the entrepreneurial competence and performance relationship.

9. Optimal Model

The regression analysis confirms entrepreneurial competence as a determinant of performance of value-system actors in Kenya's leather industry. Entrepreneurial competence is a three-factor behavioural construct. The resultant optimal regression equation for relationship is therefore:

$$P = 0.570 + 0.539EC + \varepsilon$$

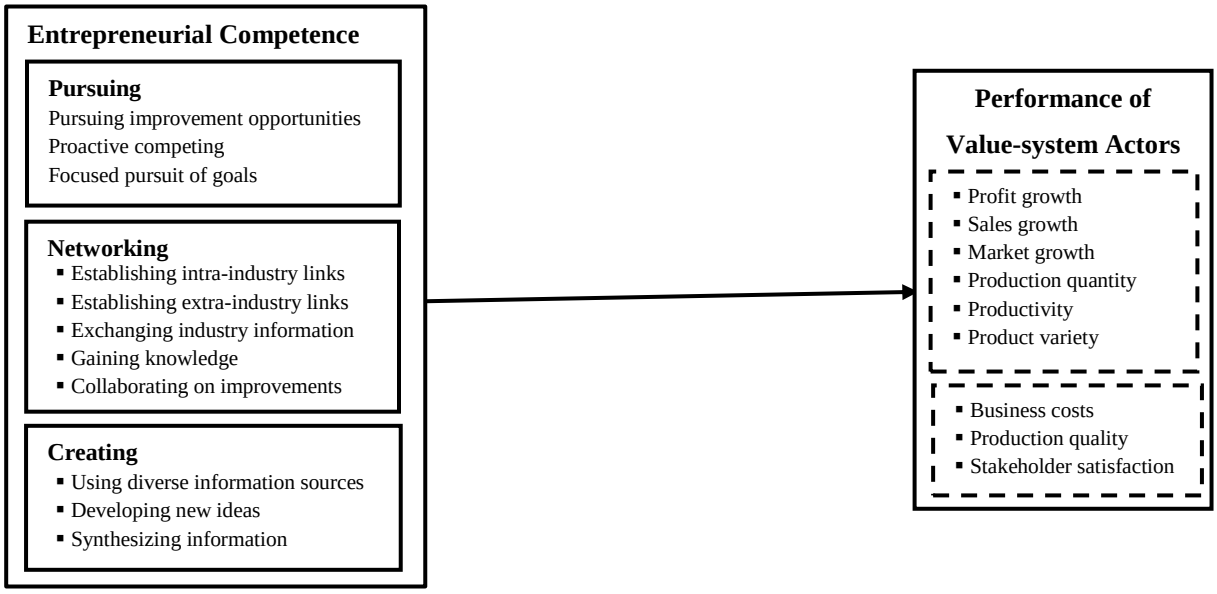
Where,

EC = Entrepreneurial Competence

P = Performance

ε = Error term.

Figure 1 shows a conceptual framework of the optimal empirical model for the relationship between entrepreneurial competence and performance factors.



Independent Variable (IV) Dependent Variable (DV)

Figure 1: Conceptual Framework of the Empirical Model Showing the Relationship between Entrepreneurial Competence and Performance of Value-system Actors

10. Conclusion

This study established entrepreneurial competence as a second-order multi-dimensional latent factor comprising networking, pursuing and creating. Innovation and performance were multi-dimensional factors comprising two sub-factors each. For performance, dimensionality may depended on the mixed design of the questions. Empirical evidence from this study showed that entrepreneurial competence determined both innovation and performance amongst industry value-system actors in Kenya's leather industry. Literature suggests that creativity as an inclination, and

the resultant creating behaviours (here studied as a competence dimension of entrepreneurship), are antecedent to innovation outcomes in a business. The results however did not support the hypothesized mediating role of innovation in the relationship between entrepreneurial competence and performance. In this case, innovation was not a mediator in the entrepreneurial competence and performance link. This was contrary to theoretical and empirical literature on the role of innovation in entrepreneurship. This study therefore concludes that entrepreneurial competence, as a behavioural construct of entrepreneurship, determines business performance of value-system actors and this relationship is not mediated by innovation. Given the significance of both entrepreneurial competence and innovation in determining performance, these factors can be enhanced through training programs, entrepreneurship practice and policy interventions in an effort to develop globally competitive entrepreneurial ecosystems. Training programs and practicing entrepreneurs could develop their creating abilities for innovation outcomes while industry regulators could adopt policies for networking within and outside the industry for knowledge exchange. The study recommends further studies in entrepreneurial competence as a behaviour, and the relationship with outcomes of innovation and performance of business ventures. Such studies could be carried out as cross-sectional research in diverse industries from an ecosystem perspective with analysis at three levels of the firm, value-system roles and the industry.

References

Acs, Z. J., Szerb, L. & Autio, E. (2015). *Global Entrepreneurship Index 2015.* Washington: The Global Entrepreneurship and Development Institute (GEDI). https://thegedi.org/global-entrepreneurship-and-development-index/

Al-Ansari, Y. D. Y. (2014). *Innovation Practices as a Path to Business Growth Performance: A Study of Small and Medium-sized Firms in the Emerging UAE Market.* (Doctoral Thesis) Southern Cross University, Lismore, NSW. https://epubs.scu.edu.au/theses/355/

Alin, A. (2010). Multicollinearity. *Wiley Interdisciplinary Reviews: Computational Statistics, 2*(3), *370-374*. https://doi.org/10.1002/wics.84

Amit, R. & Zott, C. (2012). Creating Value Through Business Model Innovation. *MIT Sloan Management Review, Spring 2012, 53*(3) *41-49.* https://sloanreview.mit.edu/article/creating-value-through-business-model-innovation/

Audretsch, D. (2007). *The Entrepreneurial Society.* New York: Oxford University Press

Banga, R., Kumar, D. & Cobbina, P. (2015). Trade-led Regional Value Chains in Sub-Saharan Africa: Case Study on the Leather Sector. *Commonwealth Trade Policy Discussion Papers, No. 2015/02.* London: Commonwealth Secretariat. https://doi.org/10.14217/5js6b1l2tf7f-en.

Barazandeh, M., Parvizian, K., Alizadeh, M. & Khosravi, S. (2015). Investigating the Effect of Entrepreneurial Competencies on Business Performance among Early Stage Entrepreneurs Global Entrepreneurship Monitor (GEM 2010 Survey Data). *Journal of Global Entrepreneurship Research (2015,) 5*(18). https://doi.org/10.1186/s40497-015-0037-4

Baron, R. A. & Ensley, M. D. (2006). Opportunity Recognition as Detection of Meaningful Pattern: Evidence from Comparisons of Novice and Experienced Entrepreneurs. *Management Science, 52*(9), *1331-1344.* http://www.jstor.org/stable/20110608

Baron, R. A. (2006). Opportunity Recognition as Pattern Recognition: How Entrepreneurs "Connect the Dots" to Identify New Business Opportunities. *Academy of Management Perspectives, 20*(1), *104-119.* https://doi.org/10.5465/amp.2006.19873412

Bartlett, M.S. (1954). A Note on the Multiplying Factors for Various Chi Square Approximations. *Journal of the Royal Statistical Society. Series B (Methodological), 16*(2), *296-298.* https://www.jstor.org/stable/pdf/2984057.pdf

Bashir, M. & Verma, R. (2017). Why Business Model Innovation Is the New Competitive Advantage. *The IUP Journal of Business Strategy, 14*(1). *7-17.* https://www.researchgate.net/profile/Makhmoor_Bashir3/publication/316644311_Why_Business_Model_Innovation_is_the_New_Competitive_Advantage/links/5a4f02eda6fdcc7b3cda8858/Why-Business-Model-Innovation-is-the-New-Competitive-Advantage.pdf

Bjerke, B. (2007). *Understanding Entrepreneurship.* Cheltenham, UK: Edward Elgar Publishing Limited.

Bless, C., Higson-Smith, C. & Kagee, A. (2009). *Fundamentals of Social Research Methods: An African Perspective.* Cape Town: Juta & Co. Ltd.

Breusch, T. S. & Pagan, A. R. (1979). A Simple Test for Heteroscedasticity and Random Coefficient Variation. *Econometrica, 47*(5), *1287-1294.* https://www.jstor.org/stable/1911963

Busenitz, L. W., Plummer, L. A., Klotz, A. C., Shahzad, A. & Rhoads, K. (2014). Entrepreneurship Research (1985 – 2009) and the Emergence of Opportunities. *Entrepreneurship Theory and Practice, 38*(5), *981-1000.* https://doi.org/10.1111/etap.12120

Carayannis, E. G. & Provance, M. (2008). Measuring Firm Innovativeness: Towards a Composite Innovation Index Build on Firm Innovative Posture, Propensity and Performance Attributes. *International Journal of Innovation and Regional Development, 1*(1), *90-107.* https://doi.org/10.1504/IJIRD.2008.016861

Clauss, T. (2016). Measuring Business Model Innovation: Conceptualization, Scale Development, and Proof of Performance. *R&D Management 2017, 47*(3), *385–403.* http://onlinelibrary.wiley.com/doi/10.1111/radm.12186/pdf

Cohen, B. (2005). Sustainable Valley Entrepreneurial Ecosystems. *Business Strategy and the Environment, 15*(1), *1-14*. https://doi.org/10.1002/bse.428

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 4th ed.* Thousand Oaks, California: SAGE Publications, Inc.

De Loecker, J. & Golberg, P. K. (2014). Firm Performance in a Global Market. *Annual Review of Economics, 6, 2014, 201-227.* https://doi.org/10.1146/annurev-economics-080113-104741

Dinh, H. T. and Clarke, R. G. G. (Eds). (2012). *Performance of Manufacturing Firms in Africa: An Empirical Analysis.* Washington, DC: World Bank. https://openknowledge.worldbank.org/handle/10986/11959

Fanzco, R. J. C. D. & Farmer, L. D. M. (2014). Understanding and Checking the Assumptions of Linear Regression: A Primer for Medical Researchers. *Clinical and Experimental Opthalmology 2014, 42: 590-596.* https://doi.org/10.1111/ceo.12358

Florin, J., Karri, R. & Rossiter, N. (2007). Fostering Entrepreneurial Drive in Business Education: An Attitudinal Approach. *Journal of Management Education, 31*(1), *February 2007.* https://doi.org/10.1177/1052562905282023

Garson, D. G. & Statistical Associates Publishing (SAP) (2012). *Testing Statistical Assumptions.* Statistical Associates Publishing. http://www.statisticalassociates.com/assumptions.pdf

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis, 7th Ed.* Essex: Pearson Education Limited.

Hansen, E. R.; Moon, Y. & Mogollon, M. P. (2015). *Kenya - Leather Industry: Diagnosis, Strategy, and Action Plan.* Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/397331468001167011/Kenya-Leather-industry-diagnosis-strategy-and-action-plan

Hisrich, R. D., Peters, M. P. & Shepherd, D. A. (2009). *Entrepreneurship (African Ed.).* New York: McGraw-Hill Custom Publishing

Jain, R. K. (2011). Entrepreneurial Competencies: A Meta-analysis and Comprehensive Conceptualization for Future Research. *Vision: The Journal of Business Perspective. 15*(2), *127-152*. https://doi.org/10.1177/097226291101500205

Kaiser, H.F. (1974). An Index of Factorial Simplicity. *Psychometrika, March 1974, 39*(1), *31-36*. https://jaltcu.org/files/articles/Kaiser1974 an index of factorial simplicity.pdf

Kaur, H. & Bains, A. (2013). Understanding the Concept of Entrepreneur Competency. *Journal of Business Management & Social Sciences Research. 2* (11). http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.403.3169&rep=rep1&type=pdf

Keeley, L., Walters, H. & Pikkel, R. and Quinn, B. (2013). *Ten Types of Innovation: The Discipline of Building Breakthroughs*. Hobcken, New Jersey: John Wiley & Sons, Inc.

Kenny, D. A. (2016). Mediation. Webpage. http://davidakenny.net/cm/mediate.htm

Kothari, C.R. & Gaurav G. (2014). *Research Methodology: Methods and Techniques, (3rd Ed.)*. New Delhi: NewAge International Limited Publishers.

Kraus, S., Rigtering, J. P. C., Hughes, M & Hosman, V. (2012). Entrepreneurial Orientation and the Business Performance of SMEs: A Quantitative Study from the Netherlands. *Review of Managerial Science, 6*(2), *161-182.* https://doi.org/10.1007/s11846-011-0062-9

Kshetri, N. (2014). Developing Successful Entrepreneurial Ecosystems: Lessons from a Comparison of an Asian Tiger and a Baltic Tiger. *Baltic Journal of Management, 9*(3), *330 – 356.* https://doi.org/10.1108/BJM-09-2013-0146

Kuratko, D. F. (2014). *Entrepreneurship*: Theory, Process and Practice, 9th Ed. Mason, Ohio, USA: South-Western, Thomson Learning.

Lans, T., Verstegen, J. & Mulder, M. (2011). Analyzing, Pursuing and Networking: Towards a Validated Three-factor Framework for Entrepreneurial Competence from a Small Firm Perspective. *International Small Business Journal, 29*(6), *695-713*. https://doi.org/10.1177/0266242610369737

Lechner, C. & Gudmundsson, S. V. (2014). Entrepreneurial Orientation, Firm Strategy and Small Firm Performance. *International Small Business Journal 2014, Vol 34*(1). https://doi.org/10.1177/0266242612455034

Leech, N. L., Barrett, K. C. & Morgan, G. A. (2005). *SPSS for Intermediate Statistics: Use and Interpretation, 2nd ed*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers. tip.iums.ac.ir/uploads/35_329_26_2.pdf

Lewin, C. & Somekh, B. (Eds). (2005). *Research Methods in the Social Sciences.* London: Sage Publications Ltd.

Li, H. Zubielqui, G. C. & O'Connor, A. (2015). Entrepreneurial Networking Capacity of Cluster Firms: A Social Network Perspective on How Shared Resources Enhance Firm Performance. *Small Business Economics 45, 523–541 (2015).* https://doi.org/10.1007/s11187-015-9659-8.

Lumpkin, G. T. & Dess, G. G. (2001). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle. Abstract from *Journal of Business Venturing, 16*(5), *429–451*. https://doi.org/10.1016/S0883-9026(00)00048-3

Madhoushi, M., Sadati, A., Delavari, H., Mehdivand, M. & Mihandost, R. (2011). Entrepreneurial Orientation and Innovation Performance: The Mediating Role of Knowledge Management. *Asian Journal of Business Management, 3*(4), *310 – 316.* https://maxwellsci.com/print/ajbm/v3-310-316.pdf

Man, T. W. Y., Lau, T & Snape, E. (2008). Entrepreneurial Competencies and the Performance of Small and Medium Enterprises: An Investigation through a Framework of Competitiveness. *Journal of Small Business and Entrepreneurship, 21*(3) *(2008), 257–276.* https://doi.org /10.1080/08276331.2008.10593424.

Mason, C. & Brown, R. (2013) Entrepreneurial Ecosystems and Growth Oriented Entrepreneurship. Conference Paper. *Organization for Economic Cooperation and Development (OECD).* https://www.oecd.org/cfe/leed/Entrepreneurial-ecosystems.pdf

McMullan, W. E. & Kenworthy, T. P. (2015). Creativity and Entrepreneurial Performance- A General Scientific Theory. *Journal of Business and Psychology, 24, 419.* https://doi.org/10.1007/s10869-009-9114

Mekonnen, H., Mudungwe, N., & Mwinyihinja, M. (2014). A Quantitative Analysis Determining the Performance of Small and Medium Enterprises (SMEs) in Leather Footwear Production in Selected Common Market for Eastern and Southern African (COMESA) Countries.

(Abstract). *Journal of Africa Leather and Leather Products Advances, 1*(1), *1-23.* https://doi.org/10.15677/jallpa.2014.v1i1.6

Ming, C. & Yang, Y. (2009). Typology and Performance of New Ventures in Taiwan: A model Based on Opportunity Recognition and Entrepreneurial Creativity. International Journal of *Entrepreneurial Behavior & Research, 15*(5), *398 – 414.* https:// doi.org/10.1108/13552550910982997.

Ministry of Industrialization Trade and Cooperatives [MOIT&C] (2016). Kenya's Industrial Transformation Programme. Webpage. Ministry of Industrialization Trade and Cooperatives Website. http://www.industrialization.go.ke/index.php/downloads/282-kenya-s-industrial-transformation-programme

Mitchelmore, S. & Rowley, J. (2010). Entrepreneurial Competencies: A literature Review and Development Agenda. *International Journal of Entrepreneurial Behaviour & Research (2010), 16(*2), *92-111*. https://doi.org/10.1108/13552551011026995

Mohamed, K., Ibrahim, H. I. & Shah, K. A. M. (2017. Empirical Evidence of Entrepreneurial Competencies and Firm Performance: A Study of Women Entrepreneurs of Nigeria. *International Journal of Entrepreneurial Knowledge, 1*(5). https://doi.org/10.1515/ijek-2017-0005

Mugenda, O.M. and Mugenda, A.G. (2003) *Research Methods, Quantitative and Qualitative Approaches.* Nairobi: ACT.

Mwinyihija, M. (2016). The Transformational Initiative of Africa's Leather Sector Dependence from Commodity to Value Created Agro-based Products. *Journal of Africa Leather and Leather Products Advances*, *3*(2). https://doi.org/10.15677/jallpa.2016.v3i2.13

Ndubisi, O. N. & Iftikhar, K. (2012). Relationship between Entrepreneurship, Innovation and Performance: Comparing Small and Medium-size Enterprises. Abstract obtained from *Journal of Research in Marketing and Entrepreneurship, 14*(2), *214 – 236.* https://doi.org/10.1108/14715201211271429

Neuman, W. L. (2009). *Understanding Research.* Boston: Pearson Education, Inc.

Ngugi, J. K., Mcorege, M. O. & Muiru, J. M. (2013). Influence of Innovativeness on Growth of SMEs in Kenya. *International Journal of Business and Social Research (IJBSR), 3*(1), *25-31*. https://thejournalofbusiness.org/index.php/site/article/download/84/83

Preacher, K. J. & Hayes, A. F. (2008). Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models. *Behavior Research Methods, 40*(3), *879-891*. https://doi.org/10.3758/BRM.40.3.879

Rauch, A. & Frese, M. (2007). Let's Put the Person Back into Entrepreneurship Research: A Meta-analysis on the Relationship between Business Owners' Personality Traits, Business Creation, and Success. *European Journal of Work and Organisational Psychology, 16*(4), *353-85*. http://www.tandfonline

Rauch, A., Wiklund, J., Lumpkin, G.T. and Frese, M. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future.

Entrepreneurship Theory and Practice, 33(3), *761-87*. https://doi.org/10.1111/j.1540-6520.2009.00308.x

Razali, N. M. & Wah, Y. B. (2011). Power Comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling Tests. *Journal of Statistical Modeling and Analytics*, *2*(1), *21-33*. https://www.nrc.gov/docs/ML1714/ML17143A100.pdf

Republic of Kenya [RoK] (2012). Micro and Small Enterprises Act No. 55 of 2012. [Online]. National Council for Law Reporting. www.kenyalaw.org.

Roach, D. C., Ryman, J. & Makani, J. (2016). Effectuation, Innovation and Performance in SMEs: An Empirical Study. *European Journal of Innovation Management, 19*(2), *214-238.* https://doi.org/10.1108/EJIM-12-2014-0119.

Sahban, M. A., Kumar, D. M. & Ramalu, S. S. (2014). Entrepreneurial Orientation Instrument (EOI): Integrating Mixed Mode of Research in Instrument Construction. International *Journal of Applied Business and Economic Research, 12*(3), *759-782.* https://www.researchgate.net/publication/266376076.

Sanchez, J. (2012). The Influence of Entrepreneurial Competencies on Small Firm Performance. *Revista Latinoamericana de Psicología, 44*(2) *165-177.* Retrieved November 3, 2015 from publicaciones.konradlorenz.edu.co/index.php/rlpsi/articl/view/1040

Sanchez, J. (2012). The Influence of Entrepreneurial Competencies on Small Firm Performance. *Revista Latinoamericana de Psicología, 44*(2) *165-177.* http://publicaciones.konradlorenz.edu.co/index.php/rlpsi/article/view/1040

Santos, J. B. & Brito, L. A. L. (2012). Toward a Subjective Measurement Model for Firm Performance. *Brazilian Administration Review, 9 (Special Issue), 95-117.* http://www.scielo.br/pdf/bar/v9nspe/07.pdf.

Santos, S.C., Caetano, A., Baron, R. & Curral, L. (2015). Prototype Models of Opportunity Recognition and the Decision to Launch a New Venture, International Journal of *Entrepreneurial Behavior & Research, 21*(4), *510 – 538.* http://dx.doi.org/10.1108/IJEBR-04-2014-0058.

Stephan, U., Hart, M. & Drews, C. C. (2015). Understanding Motivations for Entrepreneurship: A Review of Recent Research Evidence. http://www.enterpriseresearch.ac.uk/wp-content/uploads/2015/02/Understanding-Motivations-for-Entrepreneurship-Rapid-evidence-assessment-paper.pdf

Tittel, A. & Terzidis, O. (2020) Entrepreneurial Competences Revised: Developing a Consolidated and Categorized List of Entrepreneurial Competences. *Entrepreneurship Education, 3:1–35*. https://doi.org/10.1007/s41959-019-00021-4

Tornau, K. & Frese, M. (2013). Construct Clean-Up in Proactivity Research: A Meta-Analysis on the Nomological Net of Work-Related Proactivity Concepts and Their Incremental Validities. *Applied Psychology: An International Review, 62(*1*), 44-96.* http://onlinelibrary.wiley.com/doi/10.1111/j.1464-0597.2012.00514.x/full

United Nations Industrial Development Organization (UNIDO] (2010). Future Trends in the World Leather and Leather Products Industry and Trade. Vienna: UNIDO.

http://leatherpanel.org/sites/default/files/publications-attachments/future_trends_in_the_world_leather_and_leather_products_industry_and_trade.pdf

Welter, F. (2010) Contextualizing Entrepreneurship – Conceptual Challenges and Ways Forward. *Entrepreneurship Theory and Practice.* http://dx.doi.org/10.1111/j.1540-6520.2010.00427.x

Yong, A. G. & Pearce, S. (2013). A Beginner's guide to Factor Analysis: Focusing on Exploratory Factor Analysis. *Tutorials in Quantitative Methods for Psychology 2013, 9(2), 79-94.* http://www.doi/10.20982/tqmp.09.2.p079