

Entrepreneurial Competences and Enterprise Success of Paint Manufacturing SMEs in Rivers State

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Abstract: The need for manufacturing firms to deploy competences in order to increase their revenue, make profits, and ensure overall success amid stiff competition has become urgent. Moreover, there are several documented studies across various cultures and countries on the performance benefits of entrepreneurial competences. However, empirical evidence on the link between entrepreneurial competences and success of manufacturing enterprises in Nigeria is under-researched. Considering this chasm, this study investigated the effect of entrepreneurial competences on success of paint manufacturing firms in Rivers State, Nigeria. We conjectured that three facets of entrepreneurial competences (strategic competence, operational competence and learning competence) will induce enterprise success. Data were collected through cross-sectional survey on 20 paint manufacturing firms. Data from a final sample of 83 managers were analysed to generate descriptive outputs, with the aid of the Statistical Package for Social Sciences (SPSS) version 27. Moreover, three hypotheses were tested using the Partial Least Squares Path Modelling, with the aid of SmartPLS 3.2.9. Results suggested that all the three components of entrepreneurial competences amplify enterprise success. However, it is worthy of note that operational competence, followed by learning competence are the most important predictors of enterprise success, while strategic competence contributes to business success in a small measure. By implication, enterprise managers should be aware that the success of their enterprises depends, to some extent, on their ability to (i) set, evaluate, and implement strategies, (ii) effectively and efficiently utilize, align and configure critical activities and resources in their operational systems, and (iii) learn in diverse ways, learn ahead of time, update their stock of knowledge and apply learned skills and knowledge in problem situations.

Keywords: Entrepreneurial competences, strategic competence, operational competence, learning competence, enterprise success

I. Introduction

Large volumes of literature report the importance of Small Scale Enterprises (SMEs) to the growth and development of countries (Tehseen, Ahmed, Qureshi, Uddin & Ramayah, 2019; Chowdhury, Audretsch & Belitski, 2019). The activities of entrepreneurs in the SMEs translate to the creation of employment opportunities, poverty reduction and improvement of quality of life (North, Smallbone & Vickers, 2001). Moreover, due to the benefits SMEs offer to individual entrepreneurs and the society at large (Kafetzopoulos, 2020), there is a continued interest among practitioners, enterprise managers and government for enterprise success.

To gain more insight and unbundle this concept of enterprise success, researchers (e.g Bird 1995; Man, 2001; Man, Lau & Chan, 2002; Ahmad, 2007; Asemokha, Musona, Torkkeli & Saarenketo, 2019) have identified a number of factors that they claim to amplify it. One of such factors researchers say enhance business success is entrepreneurial competences - "the total sum of entrepreneurs' attributes such as attitudes, beliefs, knowledge, skills, abilities, personality, expertise and behavioural tendencies needed for successful and sustaining entrepreneurship" Kiggundu (2002, p. 244).

Resource-based theorists have noted that entrepreneurs and their competences are critical and valuable resources of firms (Mitchell & Rowley, 2010). Competences are touted as problem solving tools deployed by managers and employees to cope with the environment and achieve enterprise goals (Chandler & Jansen, 1992; Nwachukwu, 2005; Klieme & Leutner, 2006). Scholars have long agreed that entrepreneurial competences amplify profitability, growth and overall business performance (Colombo & Grilli, 2005; Gustomo, Ghina, Anggadwita & Herliana, 2019; Solesvik, 2019), which leads to economic development. Mitchell and Rowley (2013) also echoed that the competences of entrepreneurs are one of the significant determining factors for the birth, success and survival or failure of business ventures.

There are no commonly agreed measures of entrepreneurial competency as various scholars have used different facets in various sectors and country settings (see Chandler & Jansen, 1992; Georgellis, Joyce & Woods,

2000; Man, Lau & Chan, 2002; Ahmad, 2007; Man, Lau & Snape, 2008; Cruz-Ros, Garzón & Mas-Tur, 2017). Moreover, several studies (e.g. Ahmad, Ramayah, Wilson & Kummerow, 2010; Salah et al., 2015; Al Mamun, Fazal & Muniady, 2019; Reshma & Sripirabaa, 2019; Umoh, Umana & Effiom, 2020; Reyad, Alhashimi & Badawi, 2020) have demonstrated the performance benefits of various dimensions of entrepreneurial competencies based on the industry and sizes of the organisations. Curiously, most of these studies are not domiciled in sub-Saharan African countries (see Chandler & Jansen, 1992; Bird 1995; Rae & Carswell, 2001; Man, Lau & Chan, 2002; Badri, Liaghatdar, Abedi & Jafari, 2006; Ahmad, 2007; Rezaei-Zadeh et al., 2014; Barringer & Ireland, 2019). Moreover, despite these numerous studies on entrepreneurial competencies and business success in various SMEs, the paint manufacturing sector has received paltry attention.

Specifically, managers of paint manufacturing firms in the Rivers State of Nigeria are under pressure of producing quality paints at reduced cost, coupled with an array of requirements that ought to create value for customers and stakeholders, and ultimately reap success. Moreover, the need for paint manufacturing firms in the Rivers State to increase their revenue, make profits, and grow their businesses amid frenetic competition has become urgent. Following previous studies (e.g. Man, Lau & Chan, 2002; Ahmad, 2007), it is expected that enterprise managers in the paint manufacturing sector can navigate these challenges and run their businesses successfully if they improve on their competences.

Based on the above foundation, this study narrows the existing gap in literature by investigating the link between entrepreneurial competences and business success of paint manufacturing firms in the Rivers State of Nigeria.

The rest of the article has the following trajectory: immediately after this introduction is the theoretical background and hypotheses development section. This is followed by the methodology which reveals data collection and analytical techniques. The last part of the paper is for results; interpretation of results, findings and discussion; and conclusion, limitations of the study and suggestions for future studies.

II. Theoretical Background and Hypotheses Development

2.1 Theories

2.1.1 The Entrepreneurial Competency Theory

The competency theory (Boyatzis, 1982; Baum, 1994; Bird, 1995; Lau, Chan & Man, 1999; Baron & Markman, 2003) was developed based on the idea that there are certain clusters of skills and attitudes (also called capabilities) entrepreneurs require in order to enable them reap superior performance. At the rudimentary state, such skills that could foster enterprise success could be communication and oral presentation skills, human relations skills, and the ability to construct and defend a business plan before a large audience (Vesper & McMullan, 1988). Moreover, such desirable entrepreneurial characteristics - such as traits, entrepreneur's self-image or social role, cluster of knowledge or skill (Boyatzis, 1982) - are meant to last very long for the delivery of sustainable performance and success. Generally, competencies are used interchangeably with skills, knowledge, traits, abilities, acumen and experience applied in various contexts (Hunger & Wheelen, 1996; Bartlett & Ghoshal, 1997; Stuart & Lindsay, 1997; Lau et al., 1999). Furthermore, competences are classified based on those that are required to: (i) start a new venture, (ii) sustain the business, and (iii) grow the business (Chandler & Jansen, 1992; Man et al., 2002).

A notable theory on competency is the Theory of Entrepreneurial Competency that was proposed as a component of the entrepreneurial value creation theory (Bird, 1995; Mishra & Zachary, 2014). In this theory, entrepreneurial competence is viewed as primary source of generating business value through two stages - (1) formulation and (2) monetization.

Under stage one, called the formulation stage, the entrepreneur demonstrates intention and adapts to the business context using the feasibility modulator, whereby he or she adjusts and reconfigure entrepreneurial resources. The entrepreneur then moves to the effectuation multiplier sub-stage by deploying the available resources to seize prevailing opportunities and arrive at a certain level of entrepreneurial competence, which then leads to the second stage where there is prospect of success.

The second stage, also called the new venture monetization stage, commences after the development of entrepreneurial competence. The entrepreneurial competence that has been developed in stage one is transferred into the due diligence modulator, which receives feedback in stage one to determine the flow of business investment. Hence, the entrepreneur will invest more in the business depending on the perceived weight of entrepreneurial competence and quality of outcomes.

Therefore, Theory of Entrepreneurial Competency says that entrepreneurs are very cautious of investing more into the business until they are sure of their competencies, using the due diligence modulator. If there is a

signal that the start-up will fail, the due diligence modulator alerts the entrepreneur to go back to stage one (formulation stage). The theory further posits that entrepreneurs who may not have competences internal to the firm can enlist complementary competencies/capabilities through strategic alliances. The growth and success of the business largely depends on the effectiveness and velocity of deployment of the competences via these stages (Mishra & Zachary, 2014).

2.1.2 Resource-Based View Theory

The Resource Based View (RBV) suggests that a firm makes itself unique among its rivals and gains sustainable competitive advantage by possessing valuable, rare, inimitable and non-substitutable resources (Barney, 1991). The theorists of RBV argue that entrepreneur's competencies are some of such key valuable, rare, inimitable and non-substitutable resources that enable them to reap competitive success. By way of emphasis, the RBV theorizing advances an understanding that competencies are valuable skills, knowledge and abilities of an entrepreneur which may lead to sustainable competitive advantage of firm because entrepreneurial competencies are usually very rare, hence difficult for rivals to develop all essential competences. Only the competent entrepreneurs may develop and lead successful strategies towards the success of businesses (Mitchelmore, Rowley & Shiu, 2014). For instance, the firm's RBV theory relates its value creation process to the manager's capability in finding or developing resources (Grant, 1991; Barney, 1991).

2.2 Enterprise Success

Enterprise Success is the degree to which the business meets its set goals and objectives. Such goals include maximizing returns on investment, increase in return on assets (Darwish, Singh, & Mohamed, 2013), customer satisfaction, employees satisfaction and quality relationship with suppliers, community, government and other stakeholders, and general satisfaction with the performance of the enterprise. Higher level of success is indicative of increase in product or service quality, market share and profitability (Venkatraman & Ramanujam, 1987; Khatri, 2000; Wood, Holman, & Stride, 2006; Vlachos, 2008; Kwon & Rupp, 2013).

Scholars argued that external factors, such as the role of government, access to funds, state of infrastructure, economic condition, effect enterprise success business (e.g. Yusuf, 1995; Robertson et al., 2003; Baum & Locke, 2004; Mahajar & Mohd Yunus, 2006). While there is no contradiction to the fact that the external environment influences enterprise outcomes, it is equally undeniable that internal variables also dictate the success of entrepreneurial endeavours. Such internal variables could be organisational resources and competencies of the entrepreneur (Covin & Slevin, 1991; Markman, 2007). Moreover, since it is the entrepreneurs that act as gatekeepers and dictate the strategic direction of firms, their competencies in managing the environmental variables and converting opportunities to positive business outcomes are as relevant as entrepreneurs themselves (Beaver & Jennings, 2005). Thus, the success of enterprises could be explained by entrepreneurial competences (Mitchelmore & Rowley, 2010; Gustomo et al., 2019; Solesvik, 2019).

2.3 Entrepreneurial Competences

Entrepreneurs play the cardinal role of being the gate-keepers of the businesses. Thus, Markman (2007) argues that is vital for entrepreneurs to acquire competencies to ensure influence the ventures' success. According to Boyatzis (1982), competences are the "underlying characteristics of a person in that it may be a motive, trait, skill, aspects of one's self-image or social role, or a body of knowledge which he or she uses (p. 21). Bird (1995) defines entrepreneurial competences as "underlying characteristics such as generic specific knowledge, motives, traits, self-images, social roles, and skills which result in venture birth, survival, and/or growth" (p. 51), while Baum et al. (2001) submit that they are the "individual characteristics such as knowledge, skills, and/or abilities required to perform a specific job" (p. 293). Moreover, entrepreneurial competences have also been viewed as "the total sum of entrepreneurs' attributes such as attitudes, beliefs, knowledge, skills, abilities, personality, expertise and behavioural tendencies needed for successful and sustaining entrepreneurship" (Kiggundu, 2002, p. 244). A popular definition of competencies is that given by Le Boterf (1995). He defined competences as "a recognized know how to act responsibly which implies in mobilizing, integrating, transferring knowledge, skills and resources which adds economic value to the organization and social value to the individual" (p. 34).

Ahmad, (2007) submits that four common threads run in the definitions of competences, namely: (i) competences are constellations of characteristics of an individual that could be deployed to effectively performance a job, (ii) competences can be observed through the behaviour of the entrepreneur, and so can be measured by indicators, (iii) competences promote accomplishment of goals and achievement of objectives, (iv) competencies are firm-embedded resources that can be fostered through learning, training, education, development and continuous practice.

Markowska (2011) developed an input-transformation-output model of competencies. He submitted that the input factors (triggers) for the evolution of competencies are beliefs, goals and contextual embeddedness; the

transformation factors, which are the tasks or behaviors that lead to competence, are entrepreneurial learning; while the output elements (results or consequences) are knowledge, skills and attitude.

2.3.1 Dimensions of Entrepreneurial Competences

Despite its importance, the entrepreneurial competences construct has defied uniformity of dimensions. For instance, Huck and McEwen (1991) carried out a study in Jamaica to ascertain entrepreneurs' perception of competencies. The authors found that planning and budgeting, and marketing/selling are the three prominent competency areas among Jamaican entrepreneurs. Furthermore, Chandler and Jansen (1992) conducted a study on correlation between entrepreneurial competency and venture in Utah, United States. They identified six facets of entrepreneurial competencies, namely: managerial, opportunity recognition, motivation fruition, technical-functional competence and political competence.

Moreover, Georgellis, Joyce and Woods (2000) submitted that capacity to innovate, capacity to plan ahead, and willingness to take risks are the three core competences among entrepreneurs in London, United Kingdom. Also, Baum, Locke and Smith (2001) conducted a study to identify competencies among CEOs of woodwork, architectural and carpentry enterprises in the United States of America. They argued that entrepreneurial competences are divided into general competences and specific competences; whereby general competencies are organization skills and opportunity recognition skills, while specific competences are industry skills and technical skills.

Man, Lau & Chan (2002) conceptually advanced ten behaviour-based areas of entrepreneurial competences, namely; opportunity, relationship, analytical, innovative, operational, human, strategic, commitment, learning and personal strength competencies. Also, Sony and Iman (2005) mentioned that entrepreneurial competency comprises four dimensions, namely: management skills, industry skills, opportunity skills and technical skills.

In his doctoral thesis, Ahmad (2007) advanced twelve comprehensive facets of competences, namely: strategic, commitment, conceptual, opportunity, organising and leading, relationship, learning, personal, technical, ethical, social responsibility, and familism. Data reduction led to eight parsimonious factors, namely: strategic, conceptual, opportunity, personal, relationship, learning, ethical and familism.

In addition, Man, Lau and Snape (2008) assessed entrepreneurial competences through relationship, innovative, analytical, opportunity, strategic, human, operational, commitment, personal strength and learning. Also, Cruz-Ros, Garzón and Mas-Tur (2017) decomposed entrepreneurial competences into perceived opportunities, perceived capabilities, entrepreneurial intentions, and fear of failure.

Due to the relatively very small size of the paint manufacturing SMEs' sector in the State, this study focuses on the success effect of strategic, operational and learning facets of entrepreneurial competences.

2.4 Strategic Competence and Enterprise Success

Strategic competence is defined as "the capability of an enterprise to successfully undertake action that is intended to affect its long-term growth and development" (Lenz, 1980, p. 226). Man, Lau and Chan (2002) state that strategic competency is "related to setting, evaluating, and implementing the strategies for the firm" (p. 132). Thus, entrepreneurs manifest strategic competence when they have a vision for the firm, develop strategies, plans, policies and programs, and carry out relevant actions by deploying tangible and intangible resources to bring the vision to fruition.

According to Man (2001), an entrepreneurs are said to exhibit strategic competence when they can: (i) craft the direction of the firm and know the factors that can affect the course of action, (ii) line up activities in sync with set goals, (iii) reconfigure processes and structures as a response to changing contexts in order to achieve enterprise objectives, (iv) create a fit between current activities with the superordinate goals of the firm, (v) measure ongoing performance against set goals through feedback at every stage, (vi) evaluate the final outcome against performance criteria, and (vii) take the next line out action after weighing the costs and benefits.

Scholars (e.g. Ulrich & Wiersema, 1989; Peteraf & Barney, 2003; Kash, Spaulding, Gamm & Johnson (2014) have argued that entrepreneurs who are deemed strategically competent possess the firm-specific or unique capacity for flexibility, adaptability and agility in allocating resources. It has been mentioned that such efficiency in the allocation and exploitation of important resources, while navigating the chaotic business environment, may lead to enterprise growth, competitive advantage and success (Thompson & Richardson, 1996; Ahmad, 2007; Simon, Parker, Stockport & Sohal, 2017; Barringer & Ireland, 2019).

Based on the above, we formulate the following hypothesis:

H_1 : Higher levels of strategic competence will amplify enterprise success.

2.5 Operational Competence and Enterprise Success

Operational competence or capability is defined as “firm-specific set of skills, processes, and routines, developed within the operations management system, that are regularly used in solving its problems through configuring its operational resources” (Wu, Melnyk & Flynn, 2010, p. 726). It is the ability of enterprise managers to effectively and efficiently align critical activities, resources and technologies to deliver the value propositions and fulfill enterprise mission. Operational performance is the core of process - and performance measurement (Tan, Kannan, & Narasimhan, 2007; Wu et al., 2010). In addition, Halley and Beaulieu (2009) define operational competence as “abilities to control costs, quality, flexibility, deliveries and service” (p.50).

The theorizing logic behind enterprise managers’ interest in obtaining operational competence is that it may equip them with the skills to trouble-shoot, and continuously integrate and improve the day-to-day processes and routines (Pavlou & Sawy, 2011) of their firms. There is also consensus in literature that enterprises that have bundles of operational competence may achieve cost reduction, product quality improvement, timeliness, and flexibility/reliability of service delivery (Swink & Hegarty, 1998), which may lead to higher levels of revenue, innovation, competitive advantage and business success (Peng, Schroeder & Shah, 2008; Halley & Beaulieu, 2009; Wu et al., 2010; Huo, Zhao & Zhou, 2014; Palomero & Chalmers, 2014; Amoako-Gyampah, Boakye, Famiyeh & Adaku, 2019).

Therefore, based on the above scholarly revelations, we conjecture that:

H_2 : Operational competence will have a significant effect on enterprise success.

2.6 Learning Competence and Enterprise Success

According to Man (2001), learning competences connotes the capacity to “learn from various means, learn proactively, keep up to-date in the related field, and apply learned skills and knowledge into actual practices” (p. 304). It is the capacity to acquire relevant skills, knowledge and abilities for subsequent application at different stages of enterprise development (Deakins, O’Neill & Mileham, 2000). Learning competence could also be viewed as the ability to create, acquire and integrate knowledge “aimed at the development of resources and capabilities that contribute to better organizational performance” (Pérez López, Manuel Montes Peón & José Vazquez Ordás, 2005, p.228). Moreover, entrepreneurs who have developed learning competence are open to experience and constantly go for innovative ways of carrying out enterprise tasks. They easily learn from previous mistakes, achievement, failures, personal experiences, and from other peoples’ experiences; and then deploy such learned concepts and understanding into organisational problem contexts. It is acknowledged that learning competence enhances enterprise adaptability and coping capability (Deakins & Freel, 1998; Stokes & Blackburn, 2002), and promotes the generation of knowledge that could be deployed to reduce business risk (Darroch & McNaughton, 2002; Ward, 2004; Song & Kolb, 2012; Galliers). Learning competency is known to foster entrepreneurial achievement which in turn amplifies entrepreneurial learning (Rae & Carswell, 2001).

Furthermore, literature suggests that enterprises develop learning competence because it aids them to assimilate experience and opportunity (Politis, 2005), to ponder on past strategy, to acknowledge mistakes, to access resources, to recruit new members to the “entrepreneurial team” and to effectively deploy the experiences for problem solving (Man, 2007). Learning competence is the reason some enterprises are more innovative, acquire more external resources, access and share more information, learn more from experience and implement strategy better than others (Deakins, 1998; Man, 2002; Chen Wenting & Li Xinchun, 2010). Studies have recognized that learning competence enhances knowledge creation and sharing, stimulates innovation, reduces uncertainty and boosts business achievement, and consequently competitive advantage, growth, profitability, superior performance and success (Slater & Narver, 1995; Rae & Carswell, 2001; Darroch & McNaughton, 2002; Koçoğlu, İmamoğlu & İnce, 2011; Tuan & Lwin, 2013; Singh & Rao, 2017).

Following the above foundation, we hypothesize as follows:

H_3 : Learning competence has a significant influence on enterprise success.

Based on the literature review above, we develop a conceptual framework for the research as shown in Figure 1.

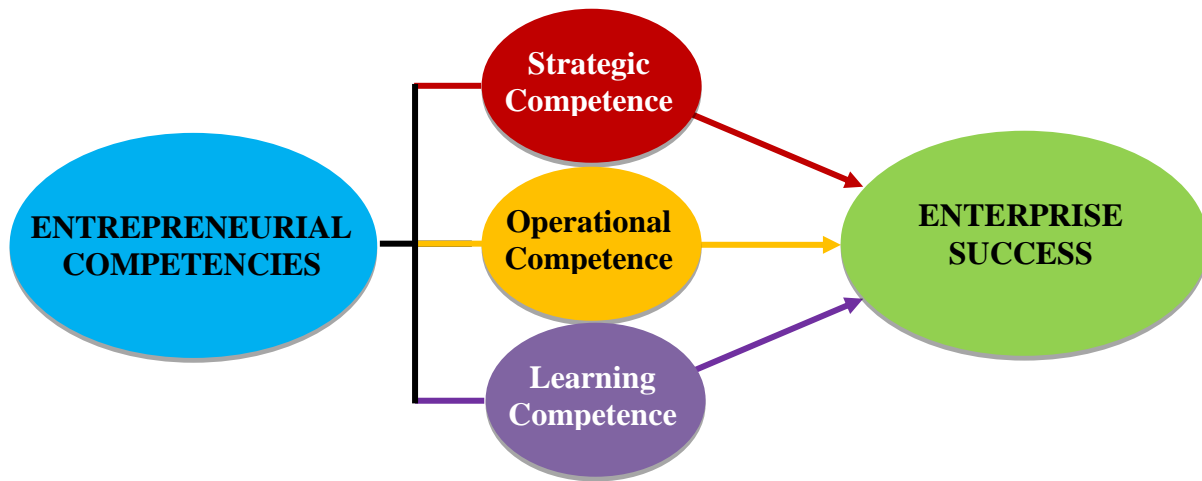


Figure 1: A conceptual framework on the relationship between Entrepreneurial Competence and Enterprise Success. Entrepreneurial Competence (independent variable) - adapted from Ahmad (2007) and Man, Lau and Snape (2008). Enterprise Success (Dependent variable) – adapted from Chu, (2012), and Fonseca, Ramos, Rosa, Braga and Sampaio (2016).

III. Methodology

3.1 Research Design

We adopted the quasi-experimental research design (Leedy&Ormrod, 2010) whereby a cross-sectional survey was conducted to collect data from respondents at a snap-shot (Rindfleisch, Malter, Ganesan& Moorman, 2008). The study deploys the hypotheco-deductive approach of positivism (Levine, Sober & Wright, 1987).

3.2 Population, Sample and Data Collection Procedure

The population of this study is all the paint companies registered with the Paint Manufacturers Association of Nigeria (PMA), Rivers State branch. Following the records of the Paint Manufacturers Association of Nigeria (PMA), Rivers State branch, there are 20 Paint Manufacturing firms in the state. We considered the entire population for the study, since the number of registered paint companies is manageable. However, judgment sampling was adopted to select members who are well informed on the dynamic processes pertaining to the study variables. Thus, the respondents of the study are members with positions such as Chief Executive Officer, production manager, marketing manager, operations managers and accountant. Responses were solicited from these members because they best understand the constructs under investigation (Huber & Power, 1985). On the whole, ninety seven (97) respondents participated in the study. Primary data was collected from the respondents via structured questionnaire.

3.3 Questionnaire Design and Measurement

The questionnaire comprises sections A-C.

Section A contains seven items pertaining to the demographic (personal) details of the respondents (e.g. gender, age, marital status). Section B comprises eighteen (18) items on the dimensions of entrepreneurial competences. Strategic competence was observed with nine (9) indicators adopted from Man, Lau and Snape(2008), e.g. “Determine long-term issues, problems, or opportunities”. Operational competence is measured by five (5) observables adapted from Halley and Beaulieu (2009), e.g. “We plan the operations of the business to reduce and control cost”; “We offer fast delivery and quickly adapt the distribution network to meet demand”. Learning competence is operationalized by four (4) indicators, culled from Man, Lau and Snape (2008). A sample statement item is “Apply learned skills and knowledge into actual practices”. Section C pertains to Enterprise Success constructed with nine (9) indicators adapted from Chu (2012), and Fonseca, Ramos, Rosa, Braga and Sampaio (2016). A sample item include: “Our firm has experienced higher growth in market share relative to competitors”. All the observed indicators for the study constructs were anchored on a five-point Likert scale of 1 to 5, where 1=strongly disagree, and 5=strongly agree (see appendix 1).

3.4 Validity of the Instrument (Face, Content and Construct)

According to Mosier (1947), face validity “implies that a test which is to be used in a practical situation should, in addition to having pragmatic or statistical validity, appear practical, pertinent and related to the purpose of the test as well; i.e., it should not only be valid, but it should also appear valid” (p. 192). Sreejesh, Mohapatra and Anusree (2014) submit that face validity of an instrument is satisfactory once there is a consensus among respondents, experts and researchers that it is relevant and sensible. We, therefore, gave the questionnaire to 7 enterprise managers in the manufacturing sector at Trans-Amadi industrial area of Rivers state, and two senior lecturers in the field of entrepreneurship and strategy to face-validate it. These experts agreed that the items and general design of the instrument were appropriate, straight-forward, simple and meaningful (Kimberlin & Winterstein, 2008).

Content validity is defined as “the extent to which an instrument adequately samples the research domain of interest when attempting to measure phenomena” (Wynd, Schmidt, & Schaefer, 2003, p. 509). We ensured content validity by doing a comprehensive search on the literature concerning the study constructs and extracted sufficient items that measure the constructs. We went further to seek approval of two industrial practitioners and 3 experts in the knowledge domain of entrepreneurship. These experts jointly and severally reviewed the indicators in the questionnaire and acknowledged that they sufficiently reflected and covered the range of meanings of the variables (Bollen, 1989).

Construct validity is a quantitative value (Creswell, 2003) that indicates whether the scores of the instrument adequately explain the underlying variables, thereby free from systematic errors. The most popular types of construct validity are *convergent validity* and *discriminant validity*.

Convergent validity is the extent to which the observables under a specified latent variable tend to statistically measure it without deviating from how it has been presented in theory. An AVE of 0.5 and above connotes sufficient convergent validity (Fornell & Larcker, 1981). Carlson and Herdman (2010) view convergent validity as a reflection of “the extent to which two measures capture a common construct” (p. 18). Test for convergent validity is demonstrated in section 4.3.1.

Discriminant validity signifies the extent to which a measured variable is uncorrelated to other measured variables that reflect different concepts (Hair, Black, Badin, Anderson & Tatham, 2005). If the square root of a construct’s AVE is greater than its correlation with all other constructs, then discriminant validity is confirmed (Fornell & Larcker, 1981; Chin, 1998; Gefen & Straub, 2005). Test for discriminant validity will be conducted in section 4.3.1

3.5 Reliability of the Research Instrument

Leedy and Ormrod (2010) define reliability as “the consistency with which a measurement instrument yields a certain, consistent result when the entity being measured hasn’t changed” (p. 116). Reliability may be assessed using four different approaches, namely: inter-rater (inter-observer) reliability, test-retest reliability, equivalent-forms reliability and internal consistency (Stangor, 2011).

Reliability outputs on SmartPLS 3.2.6 are (i) composite reliability - also known as Jöreskog’s rhoA or DillonGoldstein’s pc - which has a cut-off value of 0.7 (Wertz, Linn & Jöreskog, 1974); (ii) reliability coefficient - also known as Dijkstra-Henseler’s spA - which has a cut-off value of 0.7; and (iii) the coefficient alpha - also called Cronbach’s alpha (α) - with cut-off value of 0.7, and not exceeding 0.95 (Cronbach, 1951; Nunnally & Bernstein, 1994).

This study adopts the Cronbach’s coefficient alpha (Cronbach, 1951) measure, which is the most common, and the best, index of internal consistency (Warrens, 2015). The study adopted an Alpha value (α) of 0.7 (Nunnally & Bernstein, 1994) as acceptable minimum reliability value. Moreover, the study also reported the Jöreskog’s rhoA (DillonGoldstein’s pc) and the Dijkstra-Henseler’s spA. Test for reliability is demonstrated in section 4.3.1.

3.6 Data Analysis Techniques

After retrieving and entering the data, we performed the following quantitative procedure: Firstly, with the aid of the IBM@SPSS version 22.0., we presented results on the demographic aspects of the respondents. Secondly, we presented univariate analysis output and the descriptive aspects (means and standard deviations). We also checked for normality of data distribution via skewness and kurtosis criteria. Thirdly, we deployed Smart PLS 3.2.6 (Ringle, Wende & Becker, 2015), to assess the measurement model, via the factor loadings, reliability of the indicators, and the reliability and validity (convergent and discriminant) of the constructs (Cronbach, 1951; Fornell & Larcker, 1981; Hair, Ringle & Sarstedt, 2013). Fourthly, we examined the structural model, which involves the tests of hypotheses one to three, using Partial Least Squares (PLS) - Structural Equation Modelling (SEM), with the aid of Smart PLS 3.2.6 (Ringle, Wende & Becker, 2015). We then evaluated the

predictive accuracy (R^2), predictive relevance (Q^2) of the model, and the effect sizes (f^2) of the three dimensions of entrepreneurial competences on enterprise success.

As a rule, path coefficients (β values) of .10 to 0.29, .30 to .49 and .50 to 1.0 are weak, moderate and strong correlations, respectively (Cohen, 1988). Also, for a two tailed test at 5% level of significance, t values greater than 1.96 are significant, while t values less than 1.96 are non-significant (Hair et al., 2014). Hence, a null-hypothesis is rejected if the $t - value$ is greater than 1.96 for a two – tailed test.

Hair et al. (2014) submit that R^2 is the “percent of variance explained” by the model; hence it is a measure of the model’s predictive accuracy (p. 174). Thus the R^2 gives the investigator an idea of the total combined effects of all the dimensions of the predictor variable on the criterion variable. R-Squared values of 0.67, 0.33 and 0.19 are substantial, moderate and weak, respectively (Chin, 1998; Henseler et al., 2009).

The Q^2 (Geisser, 1974; Stone, 1974) measures the predictive relevance of the model. In PLS-SEM, Q^2 is utilized as a substitute for goodness-of-fit examination (Duarte & Raposo, 2010). It gives an idea of whether the observed variables can be reconstructed by the model and still have a fit with the parameter estimates (Esposito Vinzi, Trinchera & Amato, 2010). As a rule, Q^2 value of predictor variable greater than zero (>0) or positive suggests that the predictor is relevant to the model (Hair et al. 2011).

The effect size is the change in explained variation (R^2) on the criterion variable when any of the dimensions of the predictor variable is omitted (Chin, 1998).Cohen’s (f^2) is used as measure of effect size, where;

$$\text{Cohen's Effect size } (f^2) = \frac{R^2_{\text{dimension present}} - R^2_{\text{dimension absent}}}{1 - R^2_{\text{dimension present}}}$$

As a guideline, effect size (f^2) of 0.02 = small; 0.15 = medium, while 0.35 = large effect of a predictor’s dimension. Effect size below 0.02 is inferred as zero effect (Cohen 1988).

The Partial Least Square - Structural Equation Modelling (also called Partial Least Square Path Modelling) was developed by Wold (1974). It estimates the effect of an exogenous variable on an endogenous variable via chosen indicators (Hair et al., 2014). The PLS-SEM finds utility in several disciplines such as operations management (Bayonne, Marin-Garcia &Alfalla-Luque, 2020), marketing (Hair Sarstedt, Ringle& Mena, 2012), strategic management (Hair, Sarstedt, Pieper &Ringle, 2012), tourism (Müller et al., 2018; Usakli&Kucukergin, 2018), banking and finance (Avkiran&Ringle, 2018), and family business (Sarstedt, Ringle, Smith, Reams & Hair Jr, 2014), amongst others. Moreover, Partial Least Square - Structural Equation Modelling (PLS-SEM)is praised as a “stand-alone method capable of solving real-world problems” (Latan& Noonan 2017, p. 11).

The study adopts the PLS-SEM technique due to the following reasons: (i) It is robust in the estimation of complex relationships among variables (Hair et al., 2018), (ii) Data that have few cases (Small sample sizes) can be analysed using PLS-SEM (Latan, 2018), (iii) PLS-SEM is distribution free, so can accommodate ordinal data (Hair Jr., Babin&Krey, 2017). Hence, it can suffice as a non-parametric tool (Allen & Seaman, 2007), (iv) PLS-SEM is flexible in estimating multiple interaction effects, and models that have multiple indicators (Sarstedt et al., 2017).

IV. Results

4.1 Fieldwork, Data Cleaning and Demographic Report

The instrument was administered by hand to ninety seven target respondents. After 5 weeks (January 4th to February 8th, 2021), a total of 83 copies of the questionnaire, which were all properly filled were retrieved, representing 84.7% response rate. The high response rate was traceable to various strategies we deployed, such as: sending several emails and making telephone calls, advancing gifts to some of the respondents and fostering an atmosphere of conviviality (Singer, Groves & Corning, 1999; Yu, Alper, Nguyen, Brackbill, Turner, Walker, Maslow &Zweig, 2017). We did not record any case of missing data. Hence all the responses were keyed into the IBM@SPSS version 22.0 for subsequent analysis. The demographic summary of the respondents is shown in table 4.1.

Table 4.1:Demographic Characteristics of the respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	79	95.2	95.2	89.6
	Female	4	4.8	4.8	100.0
	Total	83	100.0	100.0	
Age	20-35	14	16.9	16.9	16.9
	36-50	40	48.2	48.2	65.1
	51-above	29	34.9	34.9	100.0
	Total	83	100.0	100.0	
Marital Status	Single	10	12.1	12.1	12.1
	Married	68	81.9	81.9	94.0
	Separated	3	3.6	3.6	97.6
	Divorced	2	2.4	2.4	100
	Total	83	100.0	100.0	
Educational Qualification	WAEC-OND	15	18.0	18.0	18.0
	HND/Bachelor	56	67.5	67.5	85.5
	Masters above	12	14.5	14.5	100
	Total	83	100.0	100.0	
Position in the Organisation	Owners	27	32.5	32.5	32.5
	Managers	56	67.5	67.5	100
	Total	83	100.0	100.0	

Source:Research Data (SPSS Output) 2021

Table 4.1 shows that 79 respondents (95.2%) were males and 4 (4.8%) females. The paint manufacturing sector is male dominated, with female managers occupying a bit lower than on-tenths of the managerial positions. For age, respondents within 20-35 age brackets were the least with only 14 respondents (16.9%), while those who are 36 years to 50 years old were the highest with 40 (48.2%). Respondents who are 51 years old and above were 29, representing 34.9% of the total number of respondents. Hence, most of the managers in the industry are in mid-life ages. For marital status, 68 respondents (81.9%) were married, 10 (12.1%) were single, 3 (3.6%) were separated, while 2 (2.4%) was divorced. It means about four-fifths of the managers in the industry are married, while about one-ninths are single. On highest level of educational attainment, 56 respondents (67.5%) have Higher National Diploma and Bachelor Degree, 15 respondents (18.0%) have The West African School Certificate and Ordinary National Diploma, while 12 respondents (14.5%) have Master Degree and above. Thus, a great number of managers in the sector are well educated. Furthermore, for position in the enterprises, there are 27 owners, representing 32.5% of the total number of respondents, while 56 (67.5%) are managers. This means only about one-thirds of the executives in the sector are owner-managers, while approximately two-thirds are employed as managers.

4.2 Univariate Analysis

Data concerning the four latent variables were analysed in terms of their means, standard deviations, skewness and kurtosis. The levels of manifestation of the variables in the enterprises were observed based on the thresholds recommended by Asawo (2009), where mean values (*M*) between 1.0 – 2.4, 2.5 - 3.4, 3.5 – 4.4 and 4.5 above were classified as low, moderate, high and very high, respectively. In the case of normality assumptions, if skewness and kurtosis values of each variable are divided by the corresponding Standard Errors (S.E), and the outputs fall within -2 and +2, it means there is no serious violation of normality (George & Mallery, 2010; Gravetter & Wallnau, 2014). Table 4.2 shows that output for univariate analysis and test for normality.

Table 4.2 Descriptive statistics on the Latent Variables

Latent Variable	N	Mean	Std. Deviation	Skewness (<i>S_k</i>)		Kurtosis (<i>K_u</i>)	
	Stat.	Stat.	Stat.	Stat.	Std. Error	Stat.	Std. Error
STR	83	2.97	.646	2.316	1.982	-.293	.192
OPE	83	3.88	.411	1.446	.729	-2.071	1.103
LEA	83	3.74	.577	-2.293	1.191	-1.224	.879
ESU	83	3.11	.482	1.997	1.231	2.111	1.069

Note: STR = Strategic Competence, OPE = Operational Competence, LEA = Learning Competence, ESU = Entrepreneurial Success

Source: SPSS Computation from Data, 2021

Table 4.2 shows that, for normality, all the variables are reasonably acceptable with the largest values being 2.316 and 2.111 for skewness and kurtosis, respectively. We did not carry out further test of normality since PLS-SEM is robust, even under conditions where data are barely normally distributed.

Also, table 4.2 shows that strategic competence was perceived by the respondents to be moderate ($M = 2.97$, $SD = 0.65$), operational competence manifested highly ($M = 3.88$, $SD = 0.411$), learning competence was perceived to be high ($M = 3.74$, $SD = 0.58$), while entrepreneurial success manifested moderately ($M = 3.11$, $SD = 0.48$). Thus, most of the owners and managers perceive that they possess moderate ability to set, evaluate and implement strategy. Furthermore, there is a general notion among the owners and managers that they are highly competent in deploying specific sets of skills, processes, and routines that are well aligned to boost the operations function. Similarly, there is a commonly agreed notion among the owners and managers they are highly competent in using various means of learning in anticipation of future challenges, while constantly updating relevant knowledge, and productively applying it at work. In addition, majority of the respondents also agreed that their enterprises moderately meet predetermined goals and objectives such as increase in returns on investment, return on assets, customer satisfaction, employee satisfaction, quality of relationship with suppliers, community, government and other stakeholders, and general satisfaction with the performance of the enterprise.

4.3: Multivariate Analysis

The model to be analyzed comprises entrepreneurial competences and enterprise success as exogenous variable and endogenous variable, respectively. Entrepreneurial competences construct is decomposed into strategic competence, operational competence and learning competence, while enterprise success is a unidimensional construct with multiple indicators.

The model has the three chosen dimensions of entrepreneurial competences that draw three (3) paths to enterprise success. Henseler, Ringle and Sinkovics (2009) recommended that, when using partial least squares structural equation modeling (PLS-SEM), the minimum sample size should be at least 10 times the highest number of structural paths connecting a particular reflective construct. Thus, the minimum number of cases for this study is $10 \times 3 = 30$. Hence, there is no problem using PLS-SEM as analytical tool in this study since there are 83 cases.

The PLS-SEM algorithm consists of the measurement (outer) model and the structural (inner) model. The outer model measures the relationship between the latent variables and their corresponding observables, while the inner model shows the structural paths that explain the effect of the exogenous variable on the endogenous variable.

The next sections pertain to the PLS-SEM assessment of the Measurement- and Structural Models.

4.3.1 Assessment of Measurement Model

The measurement model is an assessment of the reliability and convergent validity of the latent variables, using indicator (factor) loadings, indicator reliability and the Average Variance Extracted (AVE). As a rule, loadings above 0.708 suggest that the construct explains more than 50% of the indicator's variance, therefore demonstrating a satisfactory level of indicator reliability (Hulland, 1999).

Table 4.3 reveals the (factor) loadings, indicator reliability, and the reliability and convergent validity (AVE) of the constructs, based on the Smart PLS 3.2.6 output of the measurement model.

Table 4.3:PLS-SEM Assessment Results of Measurement Models

Latent Variable	Indicators	Convergent validity		Internal consistency reliability			
		Loadings	Indicator reliability	AVE	Composite reliability ρ_c	Reliability Coefficient ρ_A	Cronbach's alpha (CA)
		>0.70	>0.50	>0.50	>0.70	>0.70	0.70 - 0.95
STR	STR ₁	0.802	0.643	0.567	0.846	0.786	0.727
	STR ₂	0.744	0.554				
	STR ₃	0.709	0.503				
	STR ₄	0.811	0.658				
	STR ₅	0.747	0.558				
	STR ₆	0.729	0.531				
	STR ₇	0.816	0.543				
	STR ₈	0.782	0.612				
	STR ₉	0.708	0.501				
OPE	OPE ₁	0.758	0.575	0.665	0.798	0.760	0.720
	OPE ₂	0.880	0.774				
	OPE ₃	0.757	0.573				
	OPE ₄	0.846	0.716				
	OPE ₅	0.829	0.687				
LEA	LEA ₁	0.718	0.516	0.589	0.871	0.845	0.819
	LEA ₂	0.769	0.591				
	LEA ₃	0.803	0.645				
	LEA ₄	0.777	0.604				
ESU	ESU ₁	0.808	0.653	0.655	0.834	0.812	0.788
	ESU ₂	0.749	0.561				
	ESU ₃	0.751	0.564				
	ESU ₄	0.822	0.676				
	ESU ₅	0.817	0.668				
	ESU ₆	0.898	0.806				
	ESU ₇	0.776	0.602				
	ESU ₈	0.877	0.769				
	ESU ₉	0.772	0.596				

Note: **STR** = Strategic Competence, **OPE** = Operational Competence, **LEA** = Learning Competence, **ESU** = Entrepreneurial Success.

Source:SmartPLS 3.2.6 output on research data, 2021

Table 4.3 shows the outer loadings (l_k) of the observable variables of the facets entrepreneurial competences, including the indicators of enterprise success. With respect to the dimensions of entrepreneurial competences, all loadings scored above 0.70, which range from STR₉ ($l_k = 0.708$) to OPE₂ ($l_k = 0.880$). Moreover, all the manifest indicators of enterprise success scored above 0.70, which range from ESU₂ ($l_k = 0.749$) to ESU₆ ($l_k = 0.898$).

Furthermore, table 4.3 indicates that, when the factor loadings were squared (indicator reliability), all response items of the model explained more than 50% of the indicator’s variance, with STR₉ having the lowest indicator reliability score ($l_k^2 = 0.501$), while ESU₆ has the highest indicator reliability score ($l_k^2 = 0.806$). I addition, values for composite reliability, reliability coefficient and Cronbach's alpha for the constructs are well above the recommended cut-off of 0.7 (Hair Jr., Babin&Krey, 2017), thus satisfying conditions for reliability. Moreover, the values of AVEs are above 50% (Fornell&Larcker criterion, 1981). Thus the model does not have convergent validity problem.

Next is table 4.4 which shows the output for the test of discriminant validity.

Table 4.4: Test of Discriminant Validity - Fornell and Larcker (1981) criterion

Latent Variable	AVE	STR	OPE	LEA	ESU
STR	0.567	0.753			
OPE	0.665	0.303	0.816		
LEA	0.589	0.319	0.300	0.768	
ESU	0.655	0.174	0.183	0.282	0.809

Note: **STR** = Strategic Competence, **OPE** = Operational Competence, **LEA** = Learning Competence, **ESU** = Entrepreneurial Success. The off-diagonal values are the correlations between latent variables, while the **diagonal values (in bold) denote the square roots of AVEs.**

Source:SmartPLS 3.2.6 output on research data, 2021

Table 4.4 indicates that all the diagonal figures (square roots of the AVEs) exceed 0.7; and are far greater than the off-diagonal figures (correlations between the constructs), thus confirming that each construct sufficiently discriminates itself from any other one in the model. Therefore, model does not have discriminant problem.

4.3.2 Assessment of the Structural Model

Assessment of the structural model comes immediately after the data has been confirmed to fit the measurement model. We tested the hypotheses by bootstrapping 500 samples from the primary sample using random replacement. We then observed the path coefficients (β) and their corresponding t – values, the coefficients of determination (R^2 or predictive accuracy). We also evaluated the predictive relevance (Q^2) of the model as an alternative to goodness-of-fit, using the cross validated redundancy blindfolding procedure, with omission distance of 7 (e.g., Tenenhaus et al. 2005; Hair et al., 2017). Lastly, we the evaluated the effect size of each path in the model using Cohen’s f^2 (Cohen, 1988) by recording the various R^2 values after omitting each of the dimensions of the exogenous variable. Threshold conditions for these criteria have been stated in section 3.6.

Table 4.5 shows the results path relationships, path coefficients, standard errors and t -statistics of the hypothesized model, while figure 2 also shows path relationships between the dimensions of entrepreneurial competences (strategic competence, operational competence and learning competence) and enterprise success.

Table 4.5: Results of Hypotheses Testing

Null Hypothesis	Path (Relationship)	Path Coefficient (β)	Standard Error	t -Statistic	Decision
H ₁ :	STR -> ESU	0.374	0.183	1.981	Supported
H ₂ :	OPE-> ESU	0.488	0.296	2.037	Supported
H ₃ :	LEA-> ESU	0.471	0.745	1.968	Supported

Note: STR = Strategic Competence, OPE = Operational Competence, LEA = Learning Competence, ESU = Entrepreneurial Success. T-statistic greater than 1.96 at 0.05% level of significance. β values of .10 to 0.29, .30 to .49 and .50 to 1.0 are weak, moderate and strong correlations, respectively (Cohen, 1988).

Source:SmartPLS 3.2.6 output on research data, 2021

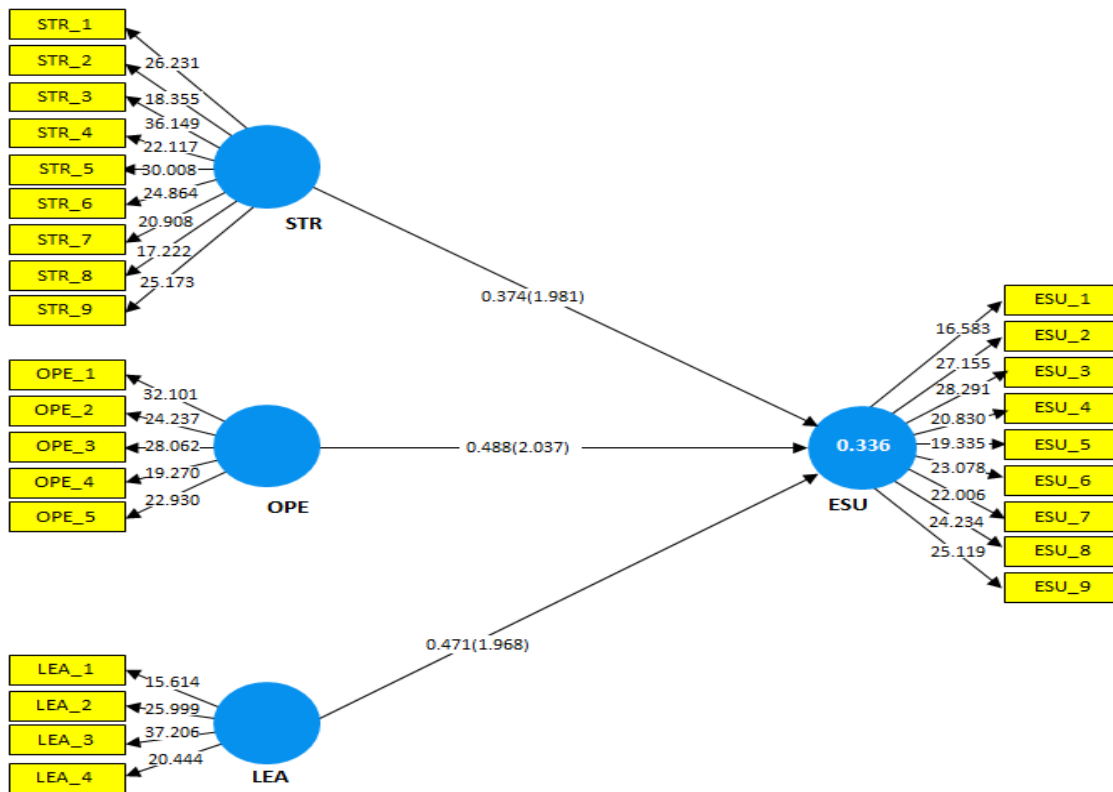


Figure 2: Smart PLS 3.2.6 output for test of hypotheses (H_1 , H_2 , and H_3), using 500 bootstrapped samples. **Note:** STR = **Strategic Competence**, OPE = **Operational Competence**, LEA = **Learning Competence**, ESU = **Entrepreneurial Success**.

Table 4.5 and figure 2 indicate that there are positive and significant paths between strategic competence and enterprise success ($\beta = 0.374$, $t = 1.981$), operational competence and enterprise success ($\beta = 0.488$, $t = 2.037$), and learning competence and enterprise success ($\beta = 0.471$, $t = 1.968$). Therefore, H_1 , H_2 and H_3 were supported.

4.3.3: Assessment of Predictive Accuracy (R^2)

The statistic that reveals the combined effect of all the dimensions of the independent variable on the dependent variable is the R-squared (R^2). According to Hair et al., (2014), the R^2 is the “percent of variance explained” by the model; hence it is a measure of the model’s predictive accuracy (p. 174). Closely related to the R^2 is the adjusted R^2 . The adjusted R-squared compensates for the weakness in R^2 by revealing the percent of variation explained by only those dimensions of the independent variable that in reality affect the dependent variable. Moreover, although the adjusted R^2 statistic is interpreted in the same way as the ordinary R^2 , it sometimes records less value (not more) than that of R^2 . We deployed bootstrapping procedure to determine the R^2 and Adjusted R values of the endogenous variables as could be seen in Table 4.6.

Table 4.6: Results of Predictive Accuracy (R^2)

Exogenous Variables	Endogenous Variable	Predictive Accuracy (R^2)	Adjusted R^2
STR	ESU	0.336	0.334
OPE			
LEA			

Note: STR = Strategic Competence, OPE = Operational Competence, LEA = Learning Competence, ESU = Entrepreneurial Success. **Reference values for R^2 :** 0.19 = weak; 0.33 = moderate; 0.67 = substantial, Chin (1988).

Source: SmartPLS 3.2.6 output on research data, 2021

Table 4.6 indicates that the model $ESU = f(STR, OPE, LEA)$ recorded a moderate and positive R^2 of 0.336. This means that all the dimensions of entrepreneurial competences (strategic competence, operational competence and learning competence) jointly explained 33.6% of the variance of enterprise success, while other unidentified variables are responsible for the remaining 66.4%. Thus, the model has a moderate predictive accuracy.

4.3.4: Assessment of Predictive Relevance (Q^2)

Furthermore, we evaluated the predictive relevance (Q^2) of the model as an alternative to goodness-of-fit, using the cross validated redundancy blindfolding procedure, with omission distance of 7. We omitted single points in the data matrix, imputed the omitted elements, and estimated the parameters. Using these estimates as input, the blindfolding procedure predicted the omitted data points. We repeated until every data point was omitted and the model re-estimated. Table 4.7 shows the output for a cross-validated predictive relevance through blindfolding with an omission distance of 7.

Table 4.7: Construct Cross-validated Redundance (Total Q^2)

Endogenous Latent Variable	SSO	SSE	$Q^2 = 1 - SSE/SSO$
STR	1487.000	1487.000	
OPE	1487.000	1487.000	
LEA	1487.000	1487.000	
ESU	1487.000	1292.381	0.1309

Note: STR = Strategic Competence, OPE = Operational Competence, LEA = Learning Competence, ESU = Entrepreneurial Success. Q^2 = Predictive Relevance; SSE= sum of squares of prediction errors; SSO = sum of squares of observations. **Reference value:** $Q^2 > 0$ = satisfactory predictive relevance, Hair et al., 2014).

As can be seen in table 4.7, the bundle of exogenous latent variables present a non-negative cross-validated redundancy index ($Q^2 = 0.1309 > 0$). This means that the path model predicts the originally observed values very well. Hence, the dimensions of entrepreneurial competences (strategic competence, operational competence and learning competence) are relevant in predicting enterprise success.

4.3.5: Assessment of Effect Sizes (f^2)

We evaluated the effect sizes of the dimensions of entrepreneurial competences on enterprise success. Effect size is the observed variation on the dependent variable due to the omission of an exogenous variable (Chin, 1998).

$$\text{Mathematically, effect size } (f^2) = \frac{R^2_{\text{variablepresent}} - R^2_{\text{variableabsent}}}{1 - R^2_{\text{variablepresent}}}$$

Below is table 4.8 which shows the effect sizes of the dimensions of entrepreneurial competences on enterprise success.

Table 4.8: Effect Sizes of the exogenous latent variables on endogenous variable

Endogenous Variable	Exogenous Variable	R-Squared Present	R-Squared Absent	f^2 - effect size	Remark on Effect Size
ESU	STR	0.336	0.306	0.0452	Small
	OPE	0.336	0.102	0.3524	Large
	LEA	0.336	0.211	0.1883	Medium

Note: STR = Strategic Competence, OPE = Operational Competence, LEA = Learning Competence, ESU = Entrepreneurial Success. **Reference values:** f^2 less than 0.020 = no effect; f^2 , 0.020 = small effect; f^2 , 0.15 = medium effect; f^2 , 0.35 = large effect (Cohen 1988).

Source:SmartPLS 3.2.6 output on research data, 2021

Table 4.8 indicates that operational competence has a large effect ($f^2 = 0.3524$) on entrepreneurial success. Moreover, learning competence has a medium effect ($f^2 = 0.1883$) on entrepreneurial success, while strategic competence has small effect ($f^2 = 0.0452$) on entrepreneurial success. Thus, operational competence contributes most to the explained variation (R^2) on entrepreneurial success, followed by a moderate contribution from learning competence, while strategic competence has the weakest effect on the dependent variable.

4.3.5: Interpretation of Results, Findings and Discussion

Having tested the hypotheses, we interpret the results and state the findings. Table 4.9 summarizes the results.

Table 4.9: Summary of Results on the Tests of Hypotheses H₁, H₂, and H₃

Null Hypothesis	Path (Relationship)	Path Coefficient (β), (t-value)	Predictive Accuracy R ²	Effect Size- f^2	Predictive Relevance -Q ²	Decision
H ₁ :	STR -> ESU	0.374(1.981) Significant	0.336 Moderate	0.0452 Small	0.1309 Relevant	Supported
H ₂ :	OPE -> ESU	0.488(2.037) Significant		0.3524 Large		Supported
H ₃ :	LEA -> ESU	0.471(1.988) Significant		0.1883 Medium		Supported

Note: STR = Strategic Competence, OPE = Operational Competence, LEA = Learning Competence, ESU = Entrepreneurial Success.

Source:SmartPLS 3.2.6 output on research data, 2021

Table 4.9 shows that there is a moderate predictive accuracy of entrepreneurial competences (assessed by strategic competence, operational competence and learning competence) on entrepreneurial success. In particular, the table suggests that a unit increase in entrepreneurial competency will predict an increase on entrepreneurial success by about one-thirds. The remaining two-thirds are due to other factors that are not captured by the model. This means that the ability of the paint manufacturing firms to achieve their goals and objectives will be enhanced by about one-thirds when they make a unit improvement in their aggregate skills, knowledge, abilities, attitudes, beliefs, personalities, expertise and other behavioural tendencies. Thus, it is obvious that more variables have to be considered to increase the explanatory power of the model, after establishing a theoretical basis.

Moreover, the model indicates a satisfactory predictive relevance on the relationship between entrepreneurial competency (assessed as strategic competence, operational competence and learning competence) and entrepreneurial success. By interpretation, how well the firms improve their aggregate skills, knowledge, abilities, attitudes, beliefs, personalities, expertise and other behavioural tendencies will, to a large extent, predict their future potentials of achieving their goals and objectives. Thus, reliance on the notion that paint manufacturing firms can achieve their goals and objectives by improving in their aggregate skills, knowledge, abilities, attitudes, beliefs, personalities, expertise and other behavioural tendencies may not be out of place.

Specifically, the beginning hypothesis (H_1) states that “higher levels of strategic competence will amplify enterprise success”. Table 4.8 indicates that strategic competence (STR) has a positive, moderate and significant relationship with enterprise success. Therefore, H_1 was supported. It means that the more the firms improve their ability to set, evaluate, and implement strategies, the more will they be able to achieve success, at least moderately.

Although the integrated model on entrepreneurial competences and entrepreneurial success reports a moderate predictive accuracy, strategic competence as a facet of entrepreneurial competency has a small effect size. Thus, it could be interpreted that the pooled effect of the two other dimensions of entrepreneurial competency (operational competence and learning competence) on enterprise success still remains substantial even if the firms’ strategic competence dwindles. This indicates that the capacity of the managers to set, evaluate and implement strategies is by no means the critical input variable that boosts the success of paint manufacturing firms. A plausible reason for the small effect size of strategic competency is that most Nigerian entrepreneurs carry out business activities based on intuition and not on clearly mapped out strategies. This finding also aligns with Lin, Huang and Tseng (2007) and Man (2007) who separately conducted studies among Australian firms and found that entrepreneurs rely copiously on gut feelings, instead of strategy, to achieve success. Moreover, Nigerian entrepreneurs are conducting business in a very turbulent environment which whittles down the effectiveness of their strategic competences.

Nevertheless, the overall finding for test of H_1 is that the capacity of firms to set, evaluate and implement strategies boosts enterprise success. This finding resonates with Man, Lau and Snape (2008) who found significant influence of strategic competency on three performance criteria. Moreover, this finding is also in conformity with Ahmad’s (2007) study that found a strong linkage between strategic competency and business success (satisfaction with financial performance, satisfaction with non-financial performance, performance relative to competitors, and business growth). However, this finding is parallel to Tehseen, Ahmed, Qureshi, Uddin and Ramayah’s (2019) study in which it was found that strategic competency had a negative relationship with business success in terms of growth.

The second hypothesis (H_2) states that “operational competence will have significant effect on enterprise success”. Table 4.8 reports that operational competence (OPE) has a positive, moderate and significant relationship with enterprise success. Hypothesis two was, therefore, supported. Thus, it can be declared that, the more firms deploy their unique sets of skills, processes, and routines; and align critical activities, resources and technologies to deliver the value propositions, the better will they be able to achieve success in terms of ROI, ROA, customer satisfaction, employees satisfaction and quality relationship with suppliers, community, government and other stakeholders, and general satisfaction with the performance of the enterprise.

A granular look at the model reveals a large effect size attributed to operational competence. This suggests that the structural congruence between entrepreneurial competences and enterprise success is chiefly due to the operational competence of the entrepreneurs. Thus, the main reason entrepreneurial competences accounts for variation in firms’ success is because of the capacity of the firms to deploy their unique sets of skills, processes, and routines; and align critical activities, resources and technologies.

Thus, it can be declared that the ability of firms to effectively and efficiently, utilize, align and configure critical activities and resources in their operational systems foster enterprise success. This finding is in tandem with Pavlou and Sawy’s (2011) conclusion that operational capability promotes new product development, which leads to success. Moreover, the Entrepreneurial Competency theory (Bird, 1995; Mishra & Zachary, 2014) suggests that the manifestation of operational competence in the enterprises could be one of the reasons for the creation of business value and ultimately success, through formulation and monetization. Furthermore, this finding is in sympathy with the study of Yu, Ramanathan, Wang and Yang (2018), who found that operations capability significantly amplifies business performance assessed by Return on Capital Employed (ROCE). Our finding also lends support to the work of Chavez, Yu, Jacobs and Feng (2017) who found that operations capability, in terms of flexibility and cost reduction, fosters superior performance for the firm. Moreover, Amoako-Gyampah, Boakye, Famiyeh & Adaku, (2019) also demonstrated that operational competence with respect to flexibility boosts enterprise success. However, our finding is incompatible to Man, Lau and Snape (2008) who established that there is no empirical linkage between operational competence and firms’ success.

The third hypothesis (H_3) states that “Learning competence has a significant influence on enterprise success.” Table 4.8 reveals that learning competence (LEA) has a positive, moderate and significant relationship with enterprise success. Hence, H_3 was supported. This suggests that as enterprise members increase their capacity to learn in diverse ways, learn ahead of time, update their stock of knowledge and apply learned skills and knowledge in problem situations, the more will the enterprises succeed in such areas as increase in return on investment, market share and the satisfaction of both primary and secondary stakeholders.

A closer look at the global model indicates a medium effect size attributed to learning competence. This demonstrates that the structural affinity between entrepreneurial competences and enterprise success is, to a moderate extent, due to the presence of learning competence of the entrepreneurs. Thus, the capacity of enterprise managers to acquire relevant skills, knowledge and abilities for subsequent application at different stages of enterprise development is the second critical factor that accounts for the moderate influence of entrepreneurial competences on business success.

We therefore state that higher levels of enterprise ability to learn in diverse ways, learn ahead of time, update their stock of knowledge and apply learned skills and knowledge in problem situations will cause an increase in enterprise success - such as increase in return on investment, market share and the satisfaction of both primary and secondary stakeholders. This finding is congruent with Koçoğlu, İmamoğlu and İnce's (2011) study which concluded that learning is the process of acquiring and sharing knowledge and vision which promotes employee satisfaction and market performance. Moreover, our finding is not a surprise since learning competence reduces business risk, enables members to carry out activities more efficiently and proactively, and aids the generation and better utilization of knowledge (Song & Kolb, 2012; Galliers, Oliveira & Zambalde, 2016) that could lead to the creation of innovative products, thereby birthing competitive performance and business success (Pérez López, Manuel Montes Peón & José Vazquez Ordás, 2005).

Our finding on learning competence also lends support to Nham & Khine Tin (2013) who demonstrated that internal and competitor learning facets amplify performance of manufacturing firms. In addition our finding is in harmony with the notion that enterprises that possess learning competence are in a better position to develop new products, services and better ways of doing business, which help them reap positive outcomes such as higher levels of new product success, increase in customer retention, higher product quality, and, consequently superior growth and profitability (Slater & Narver, 1995; Lukas et al., 1996). In addition, our finding is in agreement with Singh and Rao's (2017) study which concluded that learning capability stimulates firm's financial (Return on assets, Sales growth and Profitability) and non-financial (market share, innovation, quality and customer satisfaction) performance.

V. Conclusion, limitations of the study and suggestions for future studies.

There are a lot of documented studies on the performance benefits of entrepreneurial competences. However, empirical investigation of the link between entrepreneurial competences and success of paint manufacturing enterprises in Nigeria has been largely overlooked. Considering this chasm, this study investigated the effect of entrepreneurial competencies on success of paint manufacturing firms in Rivers State, Nigeria. Also, the study extends the literature on entrepreneurial development and reinforces the theory of entrepreneurial competences (Boyatzis, 1982; Baum, 1994; Bird, 1995; Mishra & Zachary, 2014) and resource based view (Grant, 1991; Barney, 1991) by confirming that strategic competence, operational competence and learning competence are critical resources that could be developed and deployed to achieve desirable outcomes.

Drawing from the theory of entrepreneurial competences and the works of Man, Lau and Snape (2008), we proposed that three facets of entrepreneurial competences (strategic competence, operational competence and learning competence) will induce enterprise success. Empirical evidence of self-reported data suggests that all the three components of entrepreneurial competences amplify enterprise success. However, it is worthy of note that operational competence, followed by learning competences are the most important contributors to enterprise success, while strategic competences contributes to business success in a small measure.

Thus, enterprise managers should be aware that the success of their enterprises depends, to some extent, on their ability to set, evaluate, and implement strategies. In addition, enterprise managers should take notice of the fact that they need to effectively and efficiently utilize, align and configure critical activities and resources in their operational systems if they desire greater levels of success. Moreover, managers need to understand that enterprise success may be stimulated when members increase their capacity to learn in diverse ways, learn ahead of time, update their stock of knowledge and apply learned skills and knowledge in problem situations. Aside these, our findings suggest that it was necessary for enterprise managers to pay attention to factors not captured in the model. Furthermore, although the findings are consistent with theory, this study is not without limitations.

Firstly, the study is a cross-sectional study. Hence, the causal relationship between the variables over a longer time period could not be ascertained. Future research concerning the linkages between these variables should adopt a longitudinal survey to ascertain the dynamic influence of entrepreneurial competences on enterprise success. Secondly, the study relied on only perceptual measures of enterprise success. Although it has been proven that perceptual measures of success indicators such as profitability are correlated with actual financial data, future

studies should combine perceptual with financial measures such as return on equity, return on capital employed or return on asset. This would firm up the integrity of the findings.

Thirdly, we adopted only three dimensions of entrepreneurial competence in the model, while there are more in literature. This might have accounted for the moderate predictive accuracy of the model. Moreover, we did not consider moderating variables in the model. Thus, the predictive accuracy attributed to the three measures of entrepreneurial competence may be partly traceable to other factors not captured in the study. Hence, future studies should expand the model by including more measures of entrepreneurial competence as well as moderating variables such as competitive scope, firm size and employee demographic factors.

Fourthly, the study focused on paint manufacturing. Hence, managers in other sectors should be cautious in applying the findings to their organizations. Future researchers may extent the model to other sectors such as agricultural and auto-parts sector.

Fifthly, this study is prone to common method bias (Podsakoff et al., 2003) since self-reported measures were used. Further studies should include some measures, such as test of Common Method Variance, to ascertain the integrity of responses.

Finally, this study is utilized only structured questionnaire. Since qualitative data (through interview) were not collected, we were not able to assess the richness and depth of the relationships between the variables. Future studies should combine both quantitative and qualitative data collection methods to achieve epistemological robustness.

SECTION A

Personal Data:

- 1. Name of organisation.....
- 2. Gender: Male Female
- 3. Age: 20-35 36-50 Above
- 4. Marital status: Single Married Separated Divorced
- 5. Educational Qualification: WAEC-OND H Sc M above
- 6. Position in the organisation
- 7. Years of experience in the organisation: 0-5 6-1 Above

SECTION B

The statements below describe the **Entrepreneurial Competences**construct. Please tick one choice for each of the following statement that is applicable to your organisation.

(1=strongly disagree, 2=disagree, 3=not disagree nor agree, 4= agree, 5= strongly agree)

ENTREPRENEURIAL COMPETENCES		1	2	3	4	5
Strategic Competence						
1	Determine long-term issues, problems, or opportunities					
2	Aware of the projected directions of the industry and how changes might impact the firm.					
3	Prioritize work in alignment with business goals.					
4	Redesign the department and/or organization to better meet long-term objectives and changes.					
5	Align current actions with strategic goals.					
6	Assess and link short-term, day-to-day tasks in the context of long-term direction.					
7	Monitor progress toward strategic goals.					
8	Evaluate results against strategic goals.					
9	Determine strategic actions by weighing costs and benefits.					
Operational Competence		1	2	3	4	5
1	We various techniques in our operations to reduce and control cost					
2	We make design changes to improve all aspects of our operations, including quality					
3	We introduce new products and proprietary technology quickly					
4	We offer fast delivery and quickly adapt the distribution network to meet demand					
5	We respect delivery promises					
Learning Competence		1	2	3	4	5
1	Learn proactively.					
2	Learn as much as I can in my field.					
3	Keep up to date in my field.					
4	Apply learned skills and knowledge into actual practices.					

SECTION C

The statements below describe the **Entrepreneurial Success**construct. Please tick one choice for each of the following statements as applicable to your organisation.

(1=strongly disagree, 2=disagree, 3=nor disagree nor agree, 4= agree, 5= strongly agree)

ENTREPRENEURIAL SUCCESS		1	2	3	4	5
1	Our firm has experienced higher growth in market share relative to competitors					
2	We make more profit than our peers					
3	Quality of our products is above industry average					
4	We always bring new and unique products to the market					
5	Customers are satisfied with our products and services					
6	We have been able to steadily reduce cost of production and operations					
7	The skill and knowledge of our employees has increased considerably					
8	Relationship with, suppliers, partners and other stakeholders has continuously improved					
9	We generally see our company as a successful company					

References

[1]. Ahmad, N. H. (2007). A cross-cultural study of entrepreneurial competencies and entrepreneurial success in SMEs in Australia and Malaysia.(thesis), University of Adelaide Australia.

- [2]. Ahmad, N.H., Ramayah, T., Wilson, C., & Kummerow, L. (2010), Is entrepreneurial competency and business success relationship contingent upon business environment? A study of Malaysian SMEs. *International Journal of Entrepreneurial Behavior and Research*, 16(3), 182-203.
- [3]. Al Mamun, A., Fazal, S. A., & Muniady, R. (2019). Entrepreneurial knowledge, skills, competencies and performance: A study of micro-enterprises in Kelantan, Malaysia. *Asia Pacific Journal of Innovation and Entrepreneurship*, DOI: 10.1108/APJIE-11-2018-0067.
- [4]. Allen, I.E., & Seaman, C.A. (2007). Likert scales and data analyses. *Quality Progress*, 40(7), 64-65.
- [5]. Amoako-Gyampah, K., Boakye, K. G., Famiyeh, S., & Adaku, E. (2019). Supplier integration, operational capability and firm performance: an investigation in an emerging economy environment. *Production Planning & Control*, 31(13), 1128-1148.
- [6]. Asawo, S.P. (2009) *Spiritual Leadership and Workers' Commitment in the Nigerian Manufacturing Industry* (unpublished Doctoral Dissertation) Rivers State University of Science and Technology. Port Harcourt.
- [7]. Asemokha, A., Musona, J., Torkkeli, L., & Saarenketo, S. (2019). Business model innovation and entrepreneurial orientation relationships in SMEs: Implications for international performance. *Journal of International Entrepreneurship*, 17(3), 425-453.
- [8]. Avkiran, N. K., & Ringle, C. M. (2018). Partial least squares structural equation modeling: Recent advances in banking and finance. *International Series in Operations Research & Management Science book series*, 267, DOI: 10.1007/978-3-319-71691-6.
- [9]. Badri E., Liaghatdar, M.J., Abedi, M.R., & Jafari, E. (2006). A survey of entrepreneurship capabilities of Isfahan university students. *Journal of Research and Planning In Higher Education*, 40, 73-90.
- [10]. Barney, J. (1991). Firm resources and sustained competitive. *Journal of Management*, 17, 97-120.
- [11]. Baron, R.A., & Markman, G.D. (2003). Beyond social capital: The role of entrepreneurs social competence in their financial success. *Journal of Business Venturing*, 18(1), 41-60.
- [12]. Barringer, B. R., & Ireland, R.D. (2019), *Entrepreneurship: Successfully launching new Ventures*, (6th Ed). New Jersey: Pearson Prentice-Hall.
- [13]. Bartlett, C. & Ghoshal, S. (1997). The myth of the generic manager: New personal competencies for new management roles. *California Management Review*, 40(1), 92-116.
- [14]. Baum, J. R. (1994). *The relationship of traits, competencies, motivation, strategy and structure to venture growth*. Unpublished Doctoral Dissertation, University of Maryland, College Park, MD.
- [15]. Baum, J. R., & Locke, E. (2004). The relationship of entrepreneurial traits, skill, and motivation to subsequent venture growth. *Journal of Applied Psychology*, 89(4), 587-598.
- [16]. Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, 44(2), 292-303.
- [17]. Bayonne, E., Marin-Garcia, J. A., & Alfalla-Luque, R. (2020). Partial least squares (PLS) in operations management research: insights from a systematic literature review. *Journal of Industrial Engineering and Management*, 13(3), 565-597.
- [18]. Beaver, G., & Jennings, P. (2005), Competitive advantage and entrepreneurial power: The dark side of entrepreneurship. *Journal of Small Business and Enterprise Development*, 12(1), 9-23.
- [19]. Bird, B. (1995), Towards a theory of entrepreneurial competency. *Advances in Entrepreneurship, Firm Emergence and Growth*, 2(1), 51-72.
- [20]. Bollen, K. A. (1989). *Structural equations with latent variables*. New York, John Wiley & Sons.
- [21]. Boyatzis, R.E. (1982), *The competent manager: A model for effective performance*. John Wiley & Sons, New York.
- [22]. Carlson, K. D., & Herdman, A. O. (2010). Understanding the Impact of Convergent Validity on Research Results. *Organizational Research Methods*, 15(1), 17-32. doi:10.1177/1094428110392383
- [23]. Chandler, G. N., & Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business Venturing*, 7(3), 223-236.
- [24]. Chen, W., & Li, X. (2010). Entrepreneurial learning in Chinese firms: Dimensions and empirical test. *Economic Management*, (8), 63-72.
- [25]. Chin, W. W. (1998). The partial least squares approach to structural equation modelling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295-336): Erlbaum, Mahwah, NJ.
- [26]. Chowdhury, F., Audretsch, D., & Belitski, M. (2019). Institutions and entrepreneurship quality. *Entrepreneurship Theory and Practice*, 43(7), DOI: 10.1177/1042258718780431.

- [27]. Chu, Y. H. (2012). *Resilience capabilities in the face of environmental turbulence: The case of Hong Kong small to medium enterprises*. A thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy. RMIT University.
- [28]. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd Ed.). Mahwah:Lawrence Erlbaum Associates.
- [29]. Colombo, M. G., &Grilli, L. (2005). Founders' human capital and the growth of new technology-based firms: A competence-based view. *Research Policy*, 34(6), 795-816.
- [30]. Covin, J. G., &Slevin, D. P. (1991).A conceptual model of entrepreneurship as firm behavior.*Entrepreneurship Theory and Practice*, Fall, 7-25.
- [31]. Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods approaches*. (2nd Ed.).London, Sage Publications.
- [32]. Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests.*Psychometrika*, 16(3), 297-334.
- [33]. Cruz-Ros, S., Garzón, D., &Mas-Tur, A. (2017). Entrepreneurial competencies and motivations to enhance marketing innovation in Europe.*Psychology and Marketing*, 34(11), 1031-1038.
- [34]. Darroch, J., & McNaughton, R. (2002).Examining the link between knowledge management practices and types of innovation.*Journal of Intellectual Capital*, 3(3) (2002), 210-222.
- [35]. Darwish, T., Singh, S.,& Mohamed, P. M. A. (2013). The role of strategic HR practices in organisational effectiveness: An empirical investigation in the country of Jordan. *The International Journal of Human Resource Management*.24(17). 3343-3362.
- [36]. Deakins, D.,&Freel, M. (1998). Entrepreneurial learning and the growth process in SMEs. *The Learning Organisation*, 5(3), 144–155.
- [37]. Deakins, D., O'Neill, E., &Mileham, P. (2000).Executive learning in entrepreneurial firms and the role ofexternal directors.*Education and Training*, 42(4/5), 317–325.
- [38]. Duarte, P., &Raposo, M. (2010). A PLSmodel to study brand preference:An application to the mobile phonemarket. In V. Esposito Vinzi, W. W.Chin, J.Henseler& H. Wang (Eds.).*Handbook of Partial Least Squares*.
- [39]. entrepreneurship7(3): 239.
- [40]. entrepreneurship in Africa: What is known and
- [41]. Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). *Handbook of Partial Least Squares*.Springer Handbooks of Computational Statistics, DOI 10.1007/978-3-540-32827-8 3.
- [42]. Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). PLS path modeling: From foundationsto recent developments and open issuesfor model assessment and improvement.*Handbook of Partial Least Squares*,47-82.
- [43]. Fonseca, L., Ramos, A., Rosa, Á.,Braga, A.C., &Sampaio, P. (2016). Stakeholders satisfaction and sustainable success. *International Journal of Industrial and Systems Engineering* 24 (2), 144-157.
- [44]. Fornell, C., Larcker, D.F., (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18 (1), 39-50.
- [45]. Gefen, D.,& Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems*, 16(1), 91-109.
- [46]. Geisser, S. (1974).A predictive approach to the random effects model.*Biometrika*, 61(1), 101-107.
- [47]. George, D., &Mallery, M. (2010).*SPSS for Windows Step by Step: A Simple Guide and Reference*, 17.0 update (10a Ed.) Boston, Pearson.
- [48]. Georgellis, Y., Joyce, P.,& Woods, A. (2000), Entrepreneurial action, innovation and business performance: The small independent business.*Journal of Small Business and Enterprise Development*, 7(1), 7-17.
- [49]. Grant, R. M. (1991), The resource-based theory of competitive advantage: implications for strategy formulation.*California Management Review*, 33(3), 114-135.
- [50]. Gravetter, F. J., &Wallnau, L. B. (2014).*Essentials of Statistics for the BehavioralSciences*, (8th Ed.). United States of America, Wadsworth, Cengage Learning.
- [51]. Gustomo, A.,Ghina, A., Anggadwita, G., &Herliana, S. (2019). Exploringentrepreneurial competencies in identifying ideas and opportunities,managing resources, and taking action: evidence from small cateringbusiness owners in Bandung, Indonesia.*Journal of Foodservice Business Research*, 22(6), 509-528.
- [52]. Hair Jr., J. F., Babin, J. B., &Krey, N. (2017) Covariance-Based Structural Equation Modeling in the Journal of Advertising: Review and Recommendations, *Journal of Advertising*, 46(1), 163-177.

- [53]. Hair, F. J., Black C. W., Badin, N. J., Anderson, E. R., & Tatham, R. L. (2005). *Multivariate data analysis*. New Jersey, Pearson Education Inc.
- [54]. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–151.
- [55]. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–151.
- [56]. Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012a). The use of partial least squares structural equation modeling in strategic management research: A review of past practices and recommendations for future applications. *Long Range Planning*, 45(5–6), 320–340.
- [57]. Hair, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018). *Advanced issues in partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks: Sage.
- [58]. Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012b). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414–433.
- [59]. Hair, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling*. Sage, Thousand Oaks, CA.
- [60]. Hair, J.F., Ringle, C.M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, 46(1/2), 1-12.
- [61]. Halley, A., & Beaulieu, M. (2009). Mastery of operational competencies in the context of supply chain management. *Supply Chain Management: An International Journal*, 14(1), 49-63.
- [62]. Henseler, J., Ringle, C.M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing*, 20, 277-320.
- [63]. Huber, G. P., & Power, D. J. (1985). Retrospective reports of strategic-level managers: Guidelines for increasing their accuracy. *Strategic Management Journal*, 6, 171-180.
- [64]. Huck, J., & McEwen, T. (1991). Competencies needed for small business success: Perceptions of Jamaican entrepreneurs. *Journal of Small Business Management*, 29(4), 90-93.
- [65]. Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, 20(2), 195-204.
- [66]. Hunger, J.D., & Wheelen, T.L. (1996). *Strategic Management*. New York, Addison Wesley Publishing Company.
- [67]. Huo, B., Zhao, X., & Zhou, H. (2014). The effects of competitive environment on supply chain information sharing and performance: An empirical study in China. *Production and Operations Management*, 23(4), 552 – 569.
- [68]. Kafetzopoulos, D. (2020). Organizational ambidexterity: Antecedents, performance and environmental uncertainty. *Business Process Management Journal*, (in-press) <https://doi.org/10.1108/BPMJ-06-2020-0300>.
- [69]. Kash, B. A., Spaulding, A., Gamm, L. D. & Johnson, C. E. (2014). Healthcare strategic management and the resource based view. *Journal of Strategy and Management*, 7(3), 251-264.34.
- [70]. Kash, B., Spaulding, A., Johnson, C., & Gamm, L. (2014). Success factors for strategic change initiatives: A qualitative study of healthcare administrators' perspectives. *Journal of Healthcare Management / American College of Healthcare Executives*, 59(1), 65-81.
- [71]. Khatri, N. (2000). Managing human resource for competitive advantages: A study on companies in Singapore. *International Journal of Human Resource Management*, 11(6), 336–365.
- [72]. Kiggundu, M. N. (2002). Entrepreneurs and entrepreneurship in Africa: What is known and what needs to be done. *Journal of Developmental Entrepreneurship*, 7(3), 239-259.
- [73]. Kimberlin, C. L., & Winterstein, A. G. (2008). Validity and reliability of measurement instruments used in research. *American Journal of Health-System Pharmacy*, 65(23), 2276–2284. doi:10.2146/ajhp070364
- [74]. Klieme, E., & Leutner, D. (2006). Kompetenzmodelle zur Erfassung individueller Lernergebnisse und zur Bilanzierung von Bildungsprozessen. Beschreibung eines neu eingerichteten Schwerpunktprogramms bei der DFG [Competence models for assessing individual learning outcomes and evaluating educational processes. Description of a new priority program of the German Research Foundation, DFG]. *Zeitschrift für Pädagogik*, 52, 876–903.
- [75]. Koçoğlu, I., İmamoğlu, S.Z., & İnce, H. (2011). *At the intersection of dynamic capabilities and organizational learning: Organizational learning capability as a determinant of innovation and performance*. In Proceedings of the 7th European Conference on Innovation and Entrepreneurship: ECIE, Academic Conferences Limited, 2012; 384

- [77]. Kwon, K., & Rupp, D. E. (2013). High-performer turnover and firm performance: The moderating role of human capital investment and firm reputation. *Journal of Organizational Behavior*, 34(1), 129–150.
- [78]. Latan, H. (2018). PLS path modeling in hospitality and tourism research: The golden age and days of future past. In F. Ali, M. S. Rasoolimanesh, & C. Cobanoglu (Eds.), *Application of Partial Least Squares – Structural Equation Modeling (PLS-SEM) in Tourism and Hospitality Research*. Bingley: Emerald.
- [79]. Latan, H., & Noonan, R. (Eds.). (2017). *Partial least squares structural equation modeling: Basic concepts, methodological issues and applications*. Heidelberg, Springer.
- [80]. Lau, T., Chan C.F., & Man, T.W.Y. (1999). *Entrepreneurial and managerial competencies: Small business owner-managers in Hong Kong*. Routledge, London, In P. Fosh.
- [81]. Le Boterf, G. (1995). *De la competence*. Paris: Les Editions d'Organisation.
- [82]. Leedy, P. D., & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed). Upper Saddle River NJ: Pearson.
- [83]. Lenz, R. T. (1980). Environmental strategy, organization structure and performance: Pattern in one industry. *Strategic Management Journal*, 1(3), 209-226.
- [84]. Levine, A., Sober, E., & Wright, E. O. (1987). Marxism and methodological individualism. *New Left Review*, 162, 67–84.
- [85]. Lin, C., Huang, Y., & Tseng, S. (2007). A study of planning and implementation stages in electronic commerce adoption and evaluation: The case of Australian SMEs. *Contemporary Management Research*, 3(1), 83-100.
- [86]. Mahajar, A. J., & Yunus, J.B.M. (2006). The effectiveness of government export assistance programs on Malaysia small & medium enterprises (SMEs). *Problems and Perspectives in Management*, 4(1), 58-71.
- [87]. Man, T.W., Lau, T., & Chan, K. F. (2002). The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17(2), 123-142.
- [88]. Man, T.W., 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), 257-276.
- [89]. Man, W. Y. T. (2001). *Entrepreneurial competencies and the performance of small and medium enterprises in the Hong Kong services sector*. Unpublished PhD Dissertation, the Hong Kong Polytechnic University.
- [90]. Markman, G. D. (2007). *Entrepreneur's competencies, in the psychology of entrepreneurship*, eds. Baum, J. R., Frese, M. and Baron, R., A., Mahwah, London: Lawrence Erlbaum Assoc., 67-92.
- [91]. Markowska, M. (2011). *Entrepreneurial competence development —triggers, processes and consequences*: Doctoral thesis. Jönköping University.
- [92]. Mishra, C. & Zachary, R. (2014). *The theory of entrepreneurship*. New York: Palgrave Macmillan.
- [93]. Mitchelmore, S. & Rowley, J. (2013). Entrepreneurial competencies of women entrepreneurs pursuing business growth. *Journal of Small Business and Enterprise Development*, Vol. 20(1), 125-142.
- [94]. Mitchelmore, S., & Rowley, J. (2010). Entrepreneurial competencies: A literature review and development agenda. *International Journal of Entrepreneurial Behaviour & Research*, 16(2), 92-111.
- [95]. Mitchelmore, S., Rowley, J., & Shiu, E. (2014). Competencies associated with growth of women led SMEs. *Journal of Small Business and Enterprise Development* 21(4), 588-601.
- [96]. Mosier, C. I. (1947). A critical examination of the concepts of face validity. *Educational and Psychological Measurement*, 7, 191–205.
- [97]. Müller, T., Schuberth, F. & Henseler, J. (2018). PLS path modeling – a confirmatory approach to study tourism technology and tourist behavior. *Journal of Hospitality and Tourism Technology*, 9(3), 249-266.
- [98]. Nham, P. T., Khine Tin, Z. L. (2013). Exploring the link between learning and firm performance - empirical study of private manufacturing firms in Yangon - Myanmar. *Asian Academy of Management Journal*, 18 (2), 55–84
- [99]. nc., custom ed.). Boston: Houghton Mifflin Company.
- [100]. North, D., Smallbone, D., & Vickers, I. (2001). Public sector support for innovating SMEs. *Small Business Economics*, 16(4), 303-317.
- [101]. Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd Ed.). New York, NY: McGraw-Hill.
- [102]. Nwachukwu, C.C. (2005). *The practice of entrepreneurship in Nigeria*. Onitsha: Africana-First Publishers Limited.
- [103]. Palomero, S., & Chalmers, R. (2014). A guide for supply chain integration in SMEs. *Production Planning and Control*, 25(5), 372-400.

- [104]. Pavlou, Paul & Sawy, Omar. (2011). Understanding the elusive black box of dynamic capabilities. *Decision Sciences*, 42(1), 239 - 273.
- [105]. Peng, D. X., Schroeder, R. G., & Shah, R. (2008). Linking routines to operations capabilities: A new perspective. *Journal of Operations Management*, 26, 730-748.
- [106]. Pérez López, S., Manuel, M. P. J., & José, V.O. C. (2005). Organizational learning as a determining factor in business performance. *The Learning Organization*, 12(3), 227-245.
- [107]. Peteraf, M. A., & Barney, J. B. (2003). Unraveling the resource-based tangle. *Managerial and Decision Economics*, 24, 309-323.
- [108]. Podsakoff, P.M., MacKenzie, S. B., Lee, J.Y., & Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- [109]. Politis, D. (2005). The process of entrepreneurial learning: A conceptual framework. *Entrepreneurship Theory and Practice*, 29(4), 399-424.
- [110]. Rae, D., & Carswell, M. (2001). Using a life-story approach in researching entrepreneurial learning: The development of a conceptual model and its implications in the design of learning experiences. *Education and Training*, 42(4/5), 220-228.
- [111]. Reshma, M., & Sripirabaa, B. (2019). Entrepreneurial competencies, a predictor of firm performance among the women entrepreneurs of Coimbatore city. *International Journal of Research and Analytical Reviews*, 6(2), 35-44.
- [112]. Reyad, S., Alhashimi, M., & Badawi, S. (2020). Evaluating small firms' performance through entrepreneurial competencies. *International Journal of Electronic Banking*, 2(2), 154-169.
- [113]. Rezaei-Zadeh, M., Hogan, M., O'Reilly, J., Cleary, B., & Murphy, E. (2014). Using interactivemanagement to identify, rank and model entrepreneurial competencies as universities' entrepreneurship curricula. *Journal of Entrepreneurship*, 23(1), 57-94.
- [114]. Rindfleisch, A., Malter, A. J., Ganesan, S., & Moorman, C., (2008). Cross-sectional versus longitudinal survey research: Concepts, findings, and guidelines. *Journal of Marketing Research*, 45(3), 261-279.
- [115]. Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. Retrieved from <http://www.smartpls.com>
- [116]. Robertson, M. & Collins, A., Medeira, N., & Slater, J. (2003). Barriers to start-up and their effects on aspirant entrepreneurs. *Education + Training*, 45(6), 308-316.
- [117]. Salah, B., Dulys, A., & Salah, I. B. (2015). Improving self-perception of entrepreneurial competencies among the entrepreneurs: Does entrepreneurial accompanying play a major role? Study of Reseau Entreprenre case. *Specialized Conference of the Euromed Academy of Business*, 9, 21-22.
- [118]. Sarstedt, M., Ringle, C.M., & Hair, J.F. (2017). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. Vomberg (Eds.), *Handbook of market research* (pp.1-40). Heidelberg: Springer International.
- [119]. Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105-115.
- [120]. Simon, A., Parker, A., Stockport, G., & Sohal, A. (2017). Towards an adapted MHP strategic capabilities model for moderating challenges to quality music festival management. *International Journal of Event and Festival Management*, 8(2), 151-171.
- [121]. Singer, E., Groves, R. M., & Corning, A. D. (1999). Differential incentives: Beliefs about practices, perceptions of equity, and effects on survey participation. *Public Opinion Quarterly*, 63, 251-260.
- [122]. Singh, B., & Rao, M. K. (2017). To gear up firm performance in banking industry: The role of dynamic capability. *Global Business Review*, 18(4), 1019-1040. doi:10.1177/0972150917692404
- [123]. Slater, S., & Narver, J. (1995). Market orientation and the learning organization. *Journal of a. Marketing*, 59 (3), 63-74.
- [124]. Solesvik, M. Z. (2019). Entrepreneurial competencies and intentions: The role of higher education. *Forum Scientiae Oeconomia*, 7(1), 9-23.
- [125]. Song, J. H., & Kolb, J.A (2012). Learning organizational culture and firm performance: The mediating effects of knowledge creation in Korean firms. *Journal of Leadership & Organizational Studies*, 20(2), 252-264.
- [126]. Sony, H. P., & Iman, S. (2005). Relationship between entrepreneurial learning, entrepreneurial competencies and venture success: empirical study on SMEs. *International Journal of Entrepreneurship and Innovation Management*, 5(5/6), 454-468.

- [127]. Sreejesh, S., Mohapatra, S., & Anusree, M. R. (2014). *Business research methods: An applied orientation* (1st Ed). New York, Springer International Publishing.
- [128]. Stangor, C. (2011). *Research methods for the behavioral sciences*. (Laureate Education, Inc., custom ed.). Boston: Houghton Mifflin Company.
- [129]. Stokes, D., & Blackburn, R. (2002), Learning the hard way: The lessons of owner-managers who have closed their businesses, *Journal of Small Business and Enterprise Development*, 9(1), 17-27.
- [130]. Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society*, 36(2), 111-147.
- [131]. Stuart, R., & Lindsay, P. (1997). Beyond the frame of management competencies: Towards a contextually embedded framework of managerial competence in organisations. *Journal of European Industrial Training*, 21(1), 26 - 33.
- [132]. Swink, M., & Hegarty, W. H. (1998). Core manufacturing capabilities and their links to product differentiation. *International Journal of Operations and Production Management*, 18, 374-396.
- [133]. Tan, K. H., Kannan, V., & Narasimhan, R. (2007). The impact of operations capability on firm performance. *International Journal of Production Research*, 45(21), 5135-5156.
- [134]. Tehseen, S., Ahmed, F. U., Qureshi, Z. H., & Uddin, M. J. (2019). Entrepreneurial competencies and SMEs' growth: The mediating role of network competence. *Asia-Pacific Journal of Business Administration*, 11(1), 2-29.
- [135]. Tenenhaus, M., Esposito Vinzi, V., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational Statistics & Data Analysis*, 48(1), 159-205.
- [136]. Thompson, J., & Richardson, B. (1996). Strategic and competitive success: towards a model of the comprehensively competent organization. *Management Decision*, 34(2), 5-19.
- [137]. Ulrich, D., & Wiersema, M. F. (1989). Gaining strategic and organizational capability in a turbulent business environment. *Academy of Management Perspectives*, 3(2), 115-122.
- [138]. Umoh, V. A., Umana, V. S., & Effiom, M. B. (2020). Entrepreneurial Competencies and Micro, Small and Medium Enterprises' Performance in Nigeria. *International journal of scientific and research publications*, 10(3), 627-634.
- [139]. Usakli, A., & Kucukergin, K. G. (2018) Using partial least squares structural equation modeling in hospitality and tourism: Do researchers follow practical guidelines? *International Journal of Contemporary Hospitality Management*, 30(11), 3462-3512.
- [140]. Venkatraman, N., & Ramanujam, V. (1987). Measurement of business economic performance: An examination of method convergent. *Journal of Management*, 13(1), 109-122.
- [141]. Vesper, K. H., & McMullan, W. E. (1988). Entrepreneurship: Today courses, tomorrow degrees? *Entrepreneurship Theory and Practice*, 13(1), 7-13, 1988.
- [142]. Vlachos, I. (2008). The effect of human resource practices on organizational performance: Evidence from Greece. *The International Journal of Human Resource Management*, 19(1), 74-97.
- [143]. Ward, A. (2004). Enterprise skills and enterprise learning: Foresight. *Emerald*, 6, 104-109.
- [144]. Ward, T. B. (2004). Cognition, creativity, and entrepreneurship. *Journal of Business Venturing*, 19(2), 173-18.
- [145]. Warrens, M. (2015). A comparison of reliability coefficients for psychometric tests that consist of two parts. *Advances in Data Analysis and Classification*, 10(1), DOI: 10.1007/s11634-015-0198-6.
- [146]. Wertz, C., Linn, R., and Joreskog, K. (1974). Intraclass reliability estimates: Testing structural assumptions. *Educational and Psychological Measurement*, 34(1), 25-33.
- [147]. Wold, H. (1975). PLS path models with latent variables: the nipals approach. In H. M. Blalock, A. Aganbegian, F. M. Borodkin, R. Boudon, and V. Cappecchi (Eds.), *Quantitative sociology: International perspectives on mathematical and statistical modeling*. New York: Academic Press.
- [148]. Wood, S., Holman, D., & Stride, C. (2006). Human resource management and performance in UK call centres. *British Journal of Industrial Relations*, 44, 99-122.
- [149]. Wu, S., Melnyk, S., & Flynn, B. (2010). Operational capabilities: The secret ingredient. *Decision Sciences*, 41(4), 721 - 754.
- [150]. Wynd, C. A., Schmidt, B., & Schaefer, M. A. (2003). Two quantitative approaches for estimating content validity. *Western Journal of Nursing Research*. 25(5), 508-518.
- [151]. Yu, S., Alper, H., Nguyen, A.-M., Brackbill, R., Turner, L., Walker, D., Maslow, C., & Zweig, K. (2017). The effectiveness of a monetary incentive offer on survey response rates and response completeness

- in a longitudinal study. *BMC Medical Research Methodology*, 17(77), <https://doi.org/10.1186/s12874-017-0353-1>.
- [153]. Yusuf, A. (1995). Critical success factors for small business: Perceptions of Southpacific entrepreneurs. *Journal of Small Business Management*, 2(33), 68-73.