

Entrepreneurial Competencies and the Performance of Informal SMEs: The Contingent Role of Business Environment

ABSTRACT

This study examined entrepreneurial competencies as a viable pathway for improving the innovative performance of SMEs in Nigeria's informal sector and the contingent roles of the business environment. A survey research design was used to gather data from 296 entrepreneurs who operate informal SMEs in Nigeria. Based on the findings from the SEM-PLS multivariate analysis, the study concluded that entrepreneurial competencies, especially organising, conceptual, learning, strategic, opportunity and risk-taking competencies, are essential for achieving higher innovation performance. The study also reveals that entrepreneurial competencies are useful towards mitigating environmental pressures resulting from operational turbulence and erratic policy changes, as the firm drives towards improving innovation outputs. As such, the entrepreneurship environment is becoming more endogenous as entrepreneurs, through their entrepreneurial competencies, have started to gain control over it. This study contributes to the entrepreneurship literature by highlighting the most essential competencies alongside the relevant contingencies. By doing that, this study offers a practical guide on priority competence area that entrepreneurship stakeholders, including entrepreneurs and policymakers, should consider for investment.

Keywords: Entrepreneurial Competencies, Innovation Performance, Business Environment, Informal Sector, Developing Economies

1. INTRODUCTION

Across the globe, small and medium enterprises (SMEs) make enormous contributions towards economic growth and active engagement of citizens. The assertion is as much real with the developing economies as it is with the developed economies (Ogundana, 2020). OECD (2018) opined that SMEs embody about a totality of global businesses, accounting for about 70% of all employments and generating an average range of 50% to 60% of value-added. In Africa, SMEs support economic growth through job creation in different sectors of endeavours, improve means of livelihood, industrial production upturn, and export, social enrichment as well as governmental constancy and they serve as a mainstream revenue generation in many of these economies, including in Nigeria (Shehnaz & Ramayah, 2015; Ifekwem & Adedamola, 2016; Ogundana, Galanakis, Simba and Oxborrow, 2018). However, they also must deal with challenges that pertain to sustaining their performance and continuity. For example, the informality of the substantial African SMEs industry poses a problem as to multiple taxations, unaccountable levies and little government support on the SMEs industry. With particular emphasis on Nigeria which has the largest population of persons in the African continent and a dominant SMEs industry of over forty-one million businesses (SMEDAN 2017), there is no doubt that the SMEs industry occupies a strategic position within the nation's business hub (Ogundana, Galanakis, Simba and Oxborrow, 2018). However, this present study is particular about two critical issues that relate to SMEs in Nigeria. The first issue relates to the fact that

the informal nature of the SMEs industry in Nigeria, with little regulations and support from the Government, leaves the industry operators to secure their means to business survival and growth (Madichie, Mpofo & Kolo, 2017; Ingenbleek, 2019). Consequently, firms in the Nigerian SMEs sector are poised to engage higher levels of their respective entrepreneurial competencies in combating the challenges of securing funds, competing with their foreign counterparts and with other large firms in related industries (Jevwegaga *et al.*, 2018).

In other to deal with SMEs coping capabilities with these challenges, entrepreneurial competencies appear to be a viable tool to engage (Ziziel & Tendai, 2018). Entrepreneurial competencies are the capabilities that entrepreneurs develop and inculcate into their firms' cultural patterns of operations in order to sustain performance and improve their competitive positions in the industry. According to Gwadabe and Amirah (2017), in recent times, business activities have become more competitive, and this has increased the failure of SMEs in Nigeria due to the environment and the increased competition. Entrepreneurial competencies have become very important to the survival of SMEs in Nigeria. Entrepreneurial competencies are vital to the achievement of competitive advantage in business through different measures, like proper management of relationships (Shehnaz & Ramayah, 2015). Concerning innovative performance, entrepreneurial competencies facilitate entrepreneurs' capability to identify industry opportunities, exploit collaborative platforms across industrial sectors and define a suitable pathway for the future success of the firm (Ibidunni, Olokundun, Oke & Nwaomonoh, 2017a). According to Zizile and Tendai (2018), the survival and success of SME have been positively affected by entrepreneurial competencies; they also serve as critical aids in the achievement of innovation performance among SMEs. A recent study by Gümüşay and Bohné (2018) affirmed that entrepreneurial competencies also help in the judicious and appropriate allocation of a firm's scarce resources which generally aims at the attainment of an organisation's goals and objectives which reflects in its overall performance. In light of this, entrepreneurial competencies as a form of internally induced SMEs growth mechanism is a practical interventionist pathway to enhancing SMEs innovativeness (Gwadabe & Amirah 2017). However, there has been very little empirical evidence in the literature to support entrepreneurial competencies as an interventionist strategy of the informal sector SMEs in Nigeria, in achieving innovation performance. Thus, this study poses a question about what interventionist role(s) do entrepreneurial competencies have on the innovation performance of informal SMEs in Nigeria?

The second issue which the present study seeks to investigate relates to the contingent role of the business environment in which informal sector SMEs operate and attempt to develop competencies for innovation. Prior studies have established that the business environment is critical to the performance of SMEs (Uzairu and Noor, 2017; Ogundana, Galanakis, Simba and Oxborrow, 2019; Ibidunni *et al.*, 2020). For example, Abiodun and Ibidunni (2014), Ibidunni, Olokundun, Oke, and Nwaomonoh (2017a); Weerakoon and Kodithuwakku (2018) argued that entrepreneurial competencies consist of internal environmental capabilities of the firm for sustaining performance. However, the influence of the business environment, especially the external environment, on innovation performance of SMEs appear to have received very little research attention in the literature, especially as it relates with developing economies like Nigeria. Nevertheless, this relationship is critical to such economies like Nigeria, where high

levels of political instability and erratic policies are making the ease of doing business along forgone adventure (Adeeko, 2017; Damilola, Deborah, Oyedele and Kehinde, 2020).

Moreover, this discursive omission from the literature limits the generalisation of entrepreneurial competencies theory, especially given the conditions surrounding, therefore mentioned peculiarities of developing nations. Consequently, this study aims to fill this research gap by examining the relationship between entrepreneurial competencies, business environment and innovation performance of informal SMEs in Nigeria. Upon these two established premises, this study's objective is to investigate entrepreneurial competencies as a viable pathway for improving the innovative performance of SMEs in Nigeria's informal sector and the contingent roles of business environment on that relationship. The next section of this work discusses the theoretical background and hypotheses that this study investigated. The third section is the methodology, and it will be followed by the analyses section, which depicts the statistical strength of the current study. After this, in the fifth section, the discussion section will elaborate on the findings of this study in relation to previous studies. Lastly, the fifth and sixth sections will show the practical and theoretical implications of this study, and the conclusion and further studies, respectively.

2. LITERATURE REVIEW

2.1. Informal SMEs

The informal Small and Medium-scale Enterprises (SMEs) refers to any enterprise that is not fully regulated by the Government and other public authorities (Fapohunda, 2012; Saidu and Dauda, 2014). This includes enterprises that are not officially registered and do not maintain a complete set of accounts (Bank of Industry, 2018). They include and are not limited to street traders, subsistence farmers, small scale manufacturers and service providers including hairdressers, private taxi drivers, and carpenters (Fajana, 2008; Fapohunda, 2012). Most informal SMEs often operate without a structure, underground, subterranean and unabsorbed (Saidu and Dauda, 2014; Ikadeh and Cloete, 2020). However, they continue to thrive in all economies, including the developing and industrialised countries, as they currently account for about half of global employment (International Labour Organisation, 2020). According to the International Monetary Fund (IMF), the informal sector accounts for approximately 72% of the workforce in sub-Saharan Africa, excluding agriculture. In Nigeria, the Bank of Industry (BOI, 2018) stated that informal SMEs account for more than 65% of Nigeria's 2017 GDP representing a 24% increase from the 2016 GDP contribution. In addition to that, the Nigerian informal SMEs contribute 57.9% of Nigeria's GNP at \$212.6 billion (Akintimehin et al., 2019).

Informal SMEs also contributes to the reduction in the level of unemployment by employing over 48 million Nigerians (Asalaye et al., 2018; Akintimehin et al., 2019). Many entrepreneurs have utilised the informal sector as a stepping-stone into formality (Asalaye et al., 2018). Others have used it to work their way out of poverty (ILO, 2002). The flexibility of the informal economies enabled many who are gainfully employed in the formal economies to create additional revenue, popularly known as "side-hustle in Nigeria (Akintimehin et al., 2019). However, many other economic benefits derivable from the informal enterprise activities are still unknown, mainly because the sector is highly dynamic (Saidu and Dauda, 2014). As such, the Nigerian Government continue to

introduce policy interventions to improve the productivity of informal sector players (BOI, 2018). For instance, the Nigerian Government introduced the Government Economic Empowerment Programme (GEEP) and Artisanal and Small-Scale Miners – “ASM Fund” to provide both training and financial supports to market women, artisans, and traders. The Nigerian Government also introduced the N-Power programme, a skill empowerment programme designed to help Nigerian entrepreneurs to acquire and develop life-long skills and competencies (National Social Investments Programme, 2020). Despite the introduction of different training and reskilling programmes, it is not clear whether those competencies could improve the performances of informal SMEs. This knowledge is crucial to improve the economic benefits derivable from the informal sector.

2.2. Entrepreneurial competencies

The concept of entrepreneurial competencies has its foundation not only in the competency and competence literature but also in the literature of entrepreneurship. Unfortunately, the definitions of entrepreneurial competencies are still elusive within the field of entrepreneurship (Mitchelmore and Rowley, 2010). Nonetheless, the phenomenon is primarily described as a group of competencies that enable and support successful entrepreneurship (Thomas and Herrisier, 1991; Man et al., 2002; Madichie, 2009). There is a consensus that those group of competencies, required for successful entrepreneurship, are embodied within an entrepreneur who adds value through organising resources and opportunities for their businesses (Bird, 2019). Of further importance is that the entrepreneurial competencies are learnable; therefore, recognising the importance of competencies and identifying that it is crucial for educators and the development of learning opportunities (Mitchelmore and Rowley, 2010). It is suggested in the literature that entrepreneurial competencies are associated with the lifecycle of organisations (Chandler and Jansen, 1992; Chandler and Hanks, 1994; Johnson and Winterton, 1999). Scholars opined that entrepreneurial competencies are needed mainly to operate small or new businesses (Man et al., 2002; Colombo and Grilli, 2005). Thus, Bird (1995) described entrepreneurial competencies as "baseline competencies" which are necessary to plan or launch a new venture. On the other hand, scholars (such as Johnson and Winterton, 1999; Bird, 1995; Man et al., 2002) believed that entrepreneurs require managerial competencies to operate and grow large organisations. It is this theoretical assumption that underlines our study of entrepreneurial competence in informal SMEs which are often small in their sizes.

Individually, scholars have described entrepreneurial competencies in similar but diverse ways. Bird (1995) described it as underlying characteristics such as specific knowledge, motives, traits, self-images, social roles and skills which result in venture birth, survival and growth. Man, Lau and Chan (2002) defined entrepreneurial competencies as the total ability of the entrepreneur to perform a job role successfully. In a study conducted by Bartlett and Ghoshal (1997), three categories of competencies, attitudes/traits, knowledge/experience, and, skills/abilities, were identified. Stuart and Lindsay (1997) similarly also defined entrepreneurial competencies as a person’s skills, knowledge, and personal characteristics. Entrepreneurial competencies have also been understood in terms of traits, skills and knowledge (Man, Lau & Snape, 2008; Ibidunni et

al. 2017b). Baum et al. (2001) formed a list of nine entrepreneurial competencies based on the work of others (Chandler and Jansen, 1992); these were: knowledge, cognitive ability, self-management, administration, human resource, decision skill, leadership, opportunity recognition, opportunity development and organisation skill. Man (2001) identified the following ten areas of entrepreneurial competencies: opportunity, relationship, analytical, innovative, operational, human, strategic, commitment, learning and personal strength competencies. Mitchelmore and Rowley (2010) described entrepreneurial competencies as the identification and definition of a viable market niche, the development of products/services, idea generation, environmental scanning and exploiting opportunities.

One of the reasons behind the unaligned definitions is enshrined in the different underpinning assumptions utilised by various researchers in arriving at their perception of entrepreneurial competence. Chandler and Jansen (1992) adopted a similar approach, explicitly taking an antecedent perspective by attempting to delineate fundamental knowledge or abilities thought to reflect their understanding of entrepreneurial competencies. Mitchell et al. (2002) and Shepherd (1999) commonly utilised a process or behavioural approach to studying entrepreneurial competencies in order to be in line with the process dimension of the competitiveness condition. This approach assumes that the mere possession of competencies does not necessarily make an entrepreneur competent. Instead, competencies can only be demonstrated by a person's behaviour and actions, which correspond to the dynamism characteristic of competitiveness (Man, Lau and Chan, 2002). Finally, other researchers, such as Lerner and Almor (2002), chose a performance-based perspective by identifying essential tasks and then assessing skill acumen; the assessments were subjective self-perceptions. In summary, over the last two decades, there have been several investigations in different contexts that have sought to generate lists of entrepreneurial competencies, with varying levels of categorisation (for example, Man et al., 2002; Bartlett and Ghoshal, 1997; Baum, 1994; Bird, 1995; Chandler and Jansen, 1992). Some researchers have used alternative terms such as skills or expertise, but their research generates findings that are relevant to the general field of entrepreneurial competencies.

2.3. Entrepreneurial competencies and business performance

Resource-based theorists have noted that entrepreneurs and their competencies are a critical and valuable resource of the firms (Grant, 1991; Barney, 1991). Bird (1995) suggests that since competency refers to the quality of action taken by entrepreneurs; it is directly related to venture outcomes. However, the conclusions of prior studies have been mostly inconsistent with regards to what particular form of entrepreneurial competence influences the performance of businesses. Chandler and Jansen (1992) operationalise founder competencies identified in the literature and cluster these according to three fundamental roles, traditional entrepreneurial skills; the managerial role and technical-functional role. Their results revealed that self-reported competencies of founders were correlated with venture performance. In a study conducted by Man, Lau and Chan (2002), the six aspects of entrepreneurial competencies had either direct or indirect impacts on SME performance. The results of Baum's (1994) study show that self-efficacy, technical skill, personal marketing, innovation/production focus, and passion for work had the most

robust direct positive relationships with venture growth. However, Baum (1994) observed that other aspects of entrepreneurial experiences such as vision, organisation skill, growth goals, opportunity skill and industry experience had a less positive influence on business performance. Fabrizio, Paolo and Alessandra (2011) examined the influence of entrepreneurial competencies on the business performance of small and medium-sized Italian firms. The results of their study showed that dimensions of entrepreneurial competencies, including efficiency orientation, planning, persuasiveness, self-confidence, organisational awareness, teamwork and leadership, yielded an improved output of firm performance.

An American study by Hood and Young (1993) to develop a theoretical framework of successful entrepreneurs questioned 100 leading entrepreneurs and chief executive officers of America's fastest-growing entrepreneurial firms. Hood and Young (1993) identified that the entrepreneurial competencies that were most important were leadership skills, closely followed by human relations skills, oral communications skills and written communications skills. However, the other forms of entrepreneurial competencies (including management skills, deal-making skills, logical thinking, analytical skills, decision-making skills, goal setting skills, hiring skills, and business plan preparation) had little or no significant influence on business performance. Aruni, Akira & Hironori (2014) investigated the impact of entrepreneurial competencies on entrepreneurial orientation of manufacturing firms in Sri Lanka. Their study included one hundred and nine (109) owner/managers in the private sector tea factories. Aruni, Akira & Hironori (2014) observed that entrepreneurs' strategic and commitment competencies directly relate with to entrepreneurial orientation. It is evident from the foregoing discussions that the aspects of entrepreneurial competencies that influence the performance of businesses are inconsistent. Additionally, it is unclear what aspects of entrepreneurial competencies will influence the performances of informal SMEs in a developing country context. The focus on the developing region is incredibly crucial, especially as existing studies are primarily from the developed country context. Welter (2011) and Madichie et al. (2013) observed that the developing country context would differ from the context of a developed country because of their unique spatial, institutional and social contexts. It is this focus that drives this study.

Consequently, this present study hypothesises that:

H1: Within a developing economy context of informal entrepreneurs, conceptual entrepreneurial competencies directly and positively support the innovation performance of SMEs

H2: Within a developing economy context of informal entrepreneurs, learning entrepreneurial competencies directly and positively supports the innovation performance of SMEs

H3: Within a developing economy context of informal entrepreneurs, risk-taking entrepreneurial competencies directly and positively supports the innovation performance of SMEs

H4: Within a developing economy context of informal entrepreneurs, strategic entrepreneurial competencies directly and positively support the innovation performance of SMEs

H5: Within a developing economy context of informal entrepreneurs, relationship entrepreneurial competencies directly and positively support the innovation performance of SMEs

H6: Within a developing economy context of informal entrepreneurs, opportunity entrepreneurial competencies directly and positively support the innovation performance of SMEs

2.4. Entrepreneurial competencies and environmental complexity

Ibidunni and Ogundele (2013) identified the business environment to be dynamic and unstable; this indicated the complexity of the business environment. The performance of entrepreneurs also depends on the external environment, which is not within the control of the entrepreneur (Adeeko, 2017). The above stated supports the notion that environmental factors are very much uncontrollable by the entrepreneur, and this has led to complexity in the environment, which most times translates to business failure. The external environment also consists of government policies, laws, insecurity, corruption, infrastructure, financial support and culture (White, 2004), all these factors affect the performance of SMEs especially in a country like Nigeria which is unstable politically and economically. Obiwuru, Oluwalaiye and Okwu (2011) in their study appraised the intrinsic and extrinsic (internal and external) environment of Nigerian businesses through the SWOT and PESTEL models and deduced that the external environment which is the complex environment is more related to Strategic management. Ibidunni et al. (2017a) defined strategic competencies as the ability of an entrepreneur to carry out business activities properly. In addition to that, they also mentioned that most businesses that fail, fail because of their inability of the entrepreneur to plan and envisage their complex environment strategically.

H7: The relationship between entrepreneurial competencies and the innovation performance of informal entrepreneurs in developing economies can be strengthened by the capacity to manage environmental complexity

2.5. Entrepreneurial competencies and environmental dynamism

Environmental dynamism can be the way choices and preferences of consumers change from time to time Wijnbenga & Van Witteloostuijn (2007). This also aids SMEs in creating a structure which in turn affects performance (Miles, Covin & Heeley, 2000). Government policies benefit developed countries more than other developing and underdeveloped nations (Fitzgerald 2005; Cadbury World, 2014) which spoke how the Cadbury brand demolished the French monopoly in the cocoa industry through the effective government policy adopted by the United Kingdom back in the mid-1850s. This also resulted in massive sales growth and publicity. To further support the above stated, reports in the Global Entrepreneurship and Development Institute (Acs, Szerb & Autio, 2015) stated that the USA ranked as the highest nation that supports SMEs with funds, expansion schemes and policies. Also, Canada and Australia came second and third, respectively. All these countries are highly developed, and the economies continue to thrive due to the deliberate effort made by the countries to boost entrepreneurial activities in their home nations. Obaji and Olugu (2014) reckoned in their study that strategic management is essential in the study, and strategic management still translates to strategic skills and abilities. This is aimed at helping the entrepreneur plan properly and plan beyond the foreseeable future.

H8: The relationship between entrepreneurial competencies and the innovation performance of informal entrepreneurs in developing economies is strengthened by the capacity to manage environmental dynamism

3. METHODOLOGY

The present study adopted a survey research method for investigating the moderating impact of business environment on the relationship of entrepreneurial competencies and innovation performance of SMEs in Nigeria's informal sector. In this research work, the research subjects are SMEs in Alaba International market. The estimated population of small and medium enterprises in Alaba International market amounts to 50,000 (Christian, 2019). In this particular research, the Barlett, Kotrlik, and Higgins (2001) formula was used to determine the sample size. This estimation, with an alpha value of 0.05 produced a sample size of 370 respondents for this study. However, 296 (80 per cent) copies of distributed copies of the questionnaire were retrieved and valid for inclusion in this research. Table 1 shows the respondents demographic information for this study. Table 1 shows the demographic data of respondents.

Table 1: Demographic Data of Respondents

		Frequency	Per cent
<i>Entrepreneurs' Biodata</i>			
Gender	Male	178	60.1
	Female	118	39.9
	Total	296	100.0
Age	Below 20 years	14	4.7
	21 - 30 years	134	45.3
	31 - 40 years	118	39.9
	40 - years & above	30	10.1
	Total	296	100.0
Educational Qualification	WASSCE/O LEVEL	79	26.7
	NCE/OND	53	17.9
	HND/B.SC	143	48.3
	POSTGRADUATE MBA	21	7.1
	Total	296	100.0
<i>Firms' Biodata</i>			
Year Company Started	Below 5 years	14	4.7
	5 - 10 years	79	26.7
	10 years & above	202	68.2
	Total	296	100.0
Number of Employees	Less than 10	144	48.6
	10 - 49	152	51.4
	Total	296	100.0

Source: Authors' Idea

Table 1 shows that 178(60.1%) of respondents are male, and 118 (39.9%) of the sample study are female. Table 1 also shows the age distribution of respondents of the demographic. 14(4.7%) of the respondents are between the age range of Below 20 years, 134(45.3%) of the respondents are between 21 – 30 years, 118(39.9%) of respondents are between the age range 31 – 40 Years, and 30(10.1%) of the respondents are of the age category of 40 years and above. The education qualification distribution within *Table 1* shows that 79(26.7%) had WASSCE/O LEVEL, 53(17.9%) had NCE/OND, 143(48.3%) had HDND/B.SC while 21(7.1%) is Post Graduate. Thus, implying that respondents of diverse educational backgrounds participated in this research, but HND/BSc holder is the significant respondents. Concerning the firm-level demographic data, Table 1 reveals that 14(4.7%) of the SMEs fall under the category below 5 years, 79(26.7%) of the firms are 5-10 years, while 202(68.2%) firms are 10 years and above of existence. Table 1 also shows the number of staff working with the firms to include 144(48.6%) SMEs have less than 10 staffs, while 152(51.4%) of the firms have between 10 – 49 staff. Thus, the respondents spread for this study typically occupy the categories of micro and small firms. This data conforms typically to the complete spread dominance of micro and small firms in the Nigerian SMEs industry (SMEDAN, 2017).

3.1. Measures

The items in this study adapted from existing studies. Each item used a five-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Table 1 shows all items and their respective factor loading. Entrepreneurial competencies were measured by Man *et al.* (2002) and Ahmad *et al.* (2010). It measured the extent to which entrepreneurs that are SMEs operators in Nigeria's informal technology-based market demonstrate organising, conceptual, learning, risk-taking, strategic, relationship and opportunity competencies in carrying out their businesses. During the assessment of measures for this study, some items relating to organising, relationship and opportunity competencies were removed because of weak loading, while other items were retained. Innovation performance was measured using the scale as developed by Kesinro, Adenugba and Ademilua (2018); Ibidunni, Iyiola & Ibidunni (2014), and is comprised of six items that measured the extent to which the SMEs entrepreneurs sustain an innovation culture in their firms and in fulfilling customers' expectations. The moderating variable business environment as measured by Jansen, van den Bosch and Volberda (2006), and Gaganis, Pasiouras & Voulgari (2019). This scale consisted of two dimensions, namely, environmental complexity and environmental dynamism. Environmental complexity scale comprised three items related to the extent to which the informal sector entrepreneurs perceived their operating environment to be highly competitive and turbulent. On the other hand, the environmental dynamism scale comprised of three items that measured the extent to which the entrepreneurs perceived their industry environment to be unpredictable, highly characterised by change and volatile as a result of customers' changing tastes and competitors' operational dynamism.

3.2. Measurement Assessment

To ensure the construct validity of the research scales, this study explored the various items of entrepreneurial competencies to ensure their consistency with previously established scales (for example, Man *et al.*, 2002; Ahmad *et al.*, 2010). Factor analysis was used to examine the exploratory factor analysis (EFA) (see Table 2) to identify

whether the items loading corresponded with the factors intended. Seven distinct factors emerged, namely, organising competency, conceptual competency, learning competency, risk-taking competency, strategic competency, relationship competency and opportunity competency. Items that had loading lower than 0.5 were removed. The retained items all had factor loadings ranging from 0.5 to 0.933; hence, considered to be significant (Hair Jr., Anderson, Tatham, & Black, 1998). In order to ensure the confirmatory factor analysis (CFA) of the scale, the study used the measurement scale provision of smart PLS (See Figure 1). The outer loading of all the factors representing entrepreneurial competencies was significant at $p < 0.05$ level of statistical significance.

Similarly, the overall outputs of the innovation performance scale reflected that factors were significant at $p < 0.05$ level of statistical significance. To examine the reliability and convergence validity of the scales, this study computed Cronbach alpha statistics and the composite reliability (CR) for each measure. Generally, the Cronbach's alpha values were within the 0.7 boundaries or greater, while the CR values were greater than 0.7; hence indicating supporting the reliability and convergence validity of all the scales (Bagozzi & Yi, 1988). Also, the study further assessed validity by computing the average variance explained (AVE). Holistically, the AVE values for the scales revolved around 0.5 and greater for all the measures (Hair, Risher, Sarstedt & Ringle, 2019). This study further evaluated discriminant validity by adopting Fornell and Larcker (1981) recommendation that the correlation between measures must not exceed the square root of AVE. The values in Table 3 depict the correlation matrix of all the scales for this study, and it ascertained that Fornell and Larcker's recommendation was achieved. Hence, discriminant validity for the scale is assured.

Table 2: Exploratory Factor Analysis

Item	1	2	3	4	5	6	7	8	9	10
Organizing Competency (Cronbach's alpha: 0.832, CR: 0.894, AVE: 0.685)										
ability to keep the organisation running smoothly	.684									
ability to organise resources	.857									
.....ability to coordinate tasks*	.409									
ability to identify my own strengths and weaknesses and match them with opportunities and threats	.854									
ability to learn proactively	.702									
Conceptual Competency (Cronbach's alpha: 0.764, CR: 0.820, AVE: 0.448)										
.....ability to treat new problems as opportunities		.595								
ability to integrate ideas, issues, and observation into more general contexts		.691								
ability to monitor progress toward objectives in risky actions		.795								
ability to identify goods or services customers want		.613								
ability to actively look for products and services that provide real benefit to customers		.605								
ability to redesign the department and organisation to meet long-term objectives and changes better		.575								
Learning Competency (Cronbach's alpha: 0.755, CR: 0.844, AVE: 0.575)										
.....ability to possess an extremely strong internal drive			.757							
ability to manage my career development			.596							
ability to recognise and work on my shortcomings			.586							
ability to learn as much as I can in my field			.800							
Risk-taking Competency (Cronbach's alpha: 0.705, CR: 0.812, AVE: 0.534)										
.....capability to explore new ideas				.620						
ability to take reasonable job-related risks				.701						
ability to commit to long-term business goals				.581						
ability to learn from a variety of means				.808						
Strategic Competency (Cronbach's alpha: 0.755, CR: 0.884, AVE: 0.792)										
.....ability to prioritise work in alignment with business goals					.785					
ability to refuse to let the venture fail whenever appropriate					.694					
Relationship Competency (Cronbach's alpha: 0.616, CR: 0.798, AVE: 0.576)										
.....ability to develop long-term trusting relationships with others*						.476				
ability to perceive unmet customer needs						.531				
ability to lead subordinates						.617				
ability to organise people						.685				
Opportunity Competency (Cronbach's alpha: 0.690, CR: 0.793, AVE: 0.572)										
.....desire to communicate with others effectively							.813			
ability to look at old problems in new ways							.667			
ability to align current actions with strategic goals*							.334			
ability to delegate effectively							.502			
Business Environment (Complexity) (Cronbach's alpha: 0.711, CR: 0.727, AVE: 0.699)										
competition in our local market is intense								.531		
the organisational unit has relatively strong competitors								.560		
changes in our local market are intense								.933		
Business Environment (Dynamism) (Cronbach's alpha: 0.638, CR: 0.774, AVE: 0.732)										
customers regularly ask for new products and services									.641	
volumes of products and services to be delivered change fast and often									.715	
competition in our local market is extremely high									.828	
Innovation Performance (Cronbach's alpha: 0.788, CR: 0.851, AVE: 0.491)										
innovation-based organisation										.773
customers prefer us for our innovative services more than our competitors										.631
customers appreciate the quality of our services										.768
customers tend to look for new offerings at all times										.881
Provides meaningful changes in services that add value to customers' satisfaction.										.712
Work continuously to develop a relationship with our customers.										.702

Notes: Values in parentheses represent construct reliability (that is, Cronbach's alpha, Composite Reliability – CR, Average Variance Extracted – AVE).

*Indicates an item that was removed from the scale because of a weak loading.

Table 3. Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10
Organzn_Compt	4.8007	.34317	1									
Conceptul_Compt	4.8339	.25655	.192**	1								
Learning_Compt	4.7323	.35040	.281**	-.011	1							
Risiktakng_Compt	4.6985	.33396	.099	.106	-.010	1						
Strategc_Compt	4.6976	.56204	.187**	.209**	.024	-.113	1					
Relatnsp_Compt	4.7973	.27891	-.019	-.014	.241**	.191**	-.007	1				
Opportuny_Compt	4.8412	.27572	-.025	.185**	.088	.285**	-.114	.285**	1			
Entrp_Compt	4.7716	.16285	.541**	.455**	.479**	.404**	.542**	.431**	.400**	1		
EntrpCompt_N_EnvComplx	4.8228	.19211	.574**	.281**	.551**	.404**	.304**	.045	.140*	.719**	1	
EntrpCompt_N_EnvDyn	4.8256	.18962	.583**	.142*	.661**	.278**	.398**	.260**	.194**	.799**	.790**	1

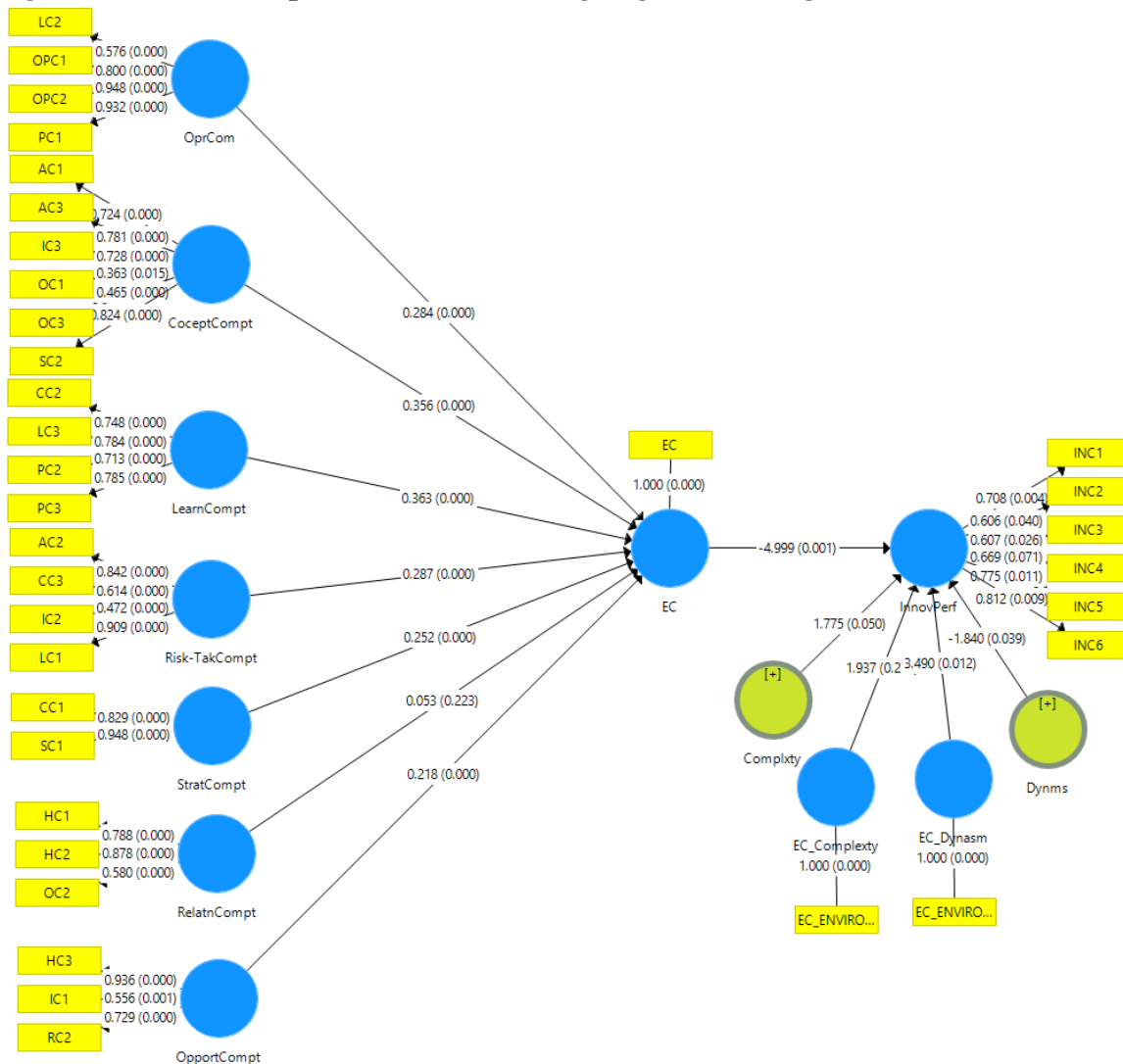
Notes: N = 296; SD: Standard Deviation

** . Correlation is significant at the 0.01 level (2-tailed). * . Correlation is significant at the 0.05 level (2-tailed).

4. ANALYSIS

This study made use of Smart PLS to test for the hypotheses earlier raised. The statistical significance of the respective regression coefficient (beta) in the structural model was specified with their accompanying P-values. P-values that were below 0.5 were considered to be statistically significant in this study. Hence, the test of hypotheses ensured that the P-values accompanying each beta coefficient was examined for significance.

Figure 1. Structural Equation Model Showing Regression Weights (P-values)



Source: Authors' Idea based on findings

Figure 1 shows the multivariate analysis result for this current study using SmartPLS. The focus of this study was to investigate the moderating impact of business environment on the relationship of entrepreneurial competencies and innovation performance of SMEs in Nigeria's informal sector. The study tested the following hypotheses: within a developing economy context of informal entrepreneurs i) organising entrepreneurial competencies directly and positively supports innovation performance of technology-based SMEs (H1); ii) conceptual entrepreneurial competencies directly and positively supports innovation performance of technology-based SMEs (H2); iii) learning entrepreneurial competencies directly and positively supports innovation performance of technology-based SMEs (H3); iv) risk-taking entrepreneurial competencies directly and

positively supports innovation performance of technology-based SMEs (H4); v) strategic entrepreneurial competencies directly and positively support innovation performance of technology-based SMEs (H5); vi) relationship entrepreneurial competencies directly and positively support innovation performance of technology-based SMEs (H6); vii) opportunity entrepreneurial competencies directly and positively support the innovation performance of technology-based SMEs (H7). The following moderating effects were also tested; viii) the relationship between entrepreneurial competencies and the innovation performance of informal entrepreneurs in developing economies is strengthened by the capacity to manage environmental complexity (H8); ix) the relationship between entrepreneurial competencies and the innovation performance of informal entrepreneurs in developing economies is strengthened by the capacity to manage environmental dynamism (H9). The results in Figure 1 shows that organizing competence ($\beta = 0.244, P = 0.000$), conceptual competence ($\beta = 0.356, P = 0.000$), learning competence ($\beta = 0.363, P = 0.000$), risk-taking competence ($\beta = 0.287, P = 0.000$), strategic competence ($\beta = 0.252, P = 0.000$) and opportunity competence ($\beta = 0.218, P = 0.000$) all had significant positive and direct impacts on innovation performance. However, the impact of relationships competence ($\beta = 0.053, P = 0.223$) on innovation performance was not statistically significant. Besides, the results showed that environmental complexity ($\beta = 1.937, P = 0.214$) did not moderate the relationship between entrepreneurial competencies and innovation performance. On the other hand, environmental dynamism ($\beta = 3.490, P = 0.012$) was positioned as a contingent factor that enhances environmental competencies in achieving higher levels of innovation performance.

Table 4: Path Coefficients of the Research Variables

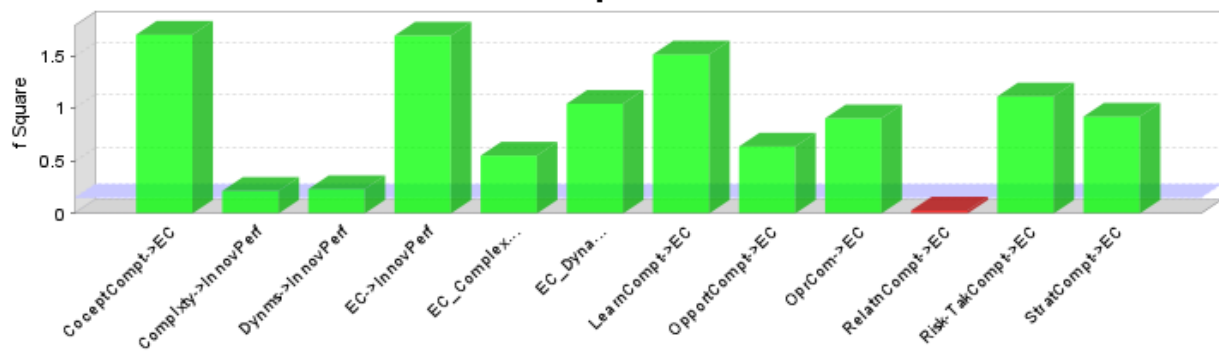
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (OI/ST. DEV)	P Values
ConceptCompt -> EC	0.356	0.352	0.056	6.372	0.000
Complxty -> InnovPerf	1.775	1.955	0.904	1.964	0.050
Dynms -> InnovPerf	-1.840	-1.972	0.888	2.071	0.039
EC -> InnovPerf	-4.999	-4.798	1.512	3.305	0.001
EC_Complexity -> InnovPerf	1.937	1.628	1.556	1.245	0.214
EC_Dynasm -> InnovPerf	3.490	3.551	1.386	2.517	0.012
LearnCompt -> EC	0.363	0.355	0.041	8.808	0.000
OpportCompt -> EC	0.218	0.217	0.041	5.374	0.000
OrganizCompt -> EC	0.284	0.281	0.045	6.260	0.000
RelatnCompt -> EC	0.053	0.057	0.044	1.220	0.223
Risk-TakCompt -> EC	0.287	0.292	0.047	6.059	0.000
StratCompt -> EC	0.252	0.252	0.049	5.103	0.000

Source: Authors' Idea based on findings

Table 4 shows the path coefficient of the research variables for the current study. As earlier mentioned, the significant levels among the entrepreneurial competencies and the business environment variables represented their significant impact on innovation performance. As shown in the table, the indicators that show a significant relationship among variables are significant at $P < 0.05$. The T-value are within the range of 1.220 to 8.808 at a confidence interval of 1.96.

The study further examined the statistical results to identify the effect sizes of each respective dimension of entrepreneurial orientation on innovation performance of MSMEs in the study context. This was done alongside the contingent variables, including environmental complexity and environmental dynamism. Figure 2 reflects the F-square (f^2) values that show the effect size of each of the variables. According to Cohen (1988), effect sizes of f^2 greater than or equal to 0.02 is small, f^2 greater than or equal to 0.15 is medium, and f^2 greater than or equal to 0.35 is large, respectively for every relationship among variables. SMART PLS automatically calculates f^2 analysis. Hence, the results in Figure 2 shows that the competencies that matter most include conceptual competence ($f^2 = 1.700$), learning competence ($f^2 = 1.512$), risk-taking competence ($f^2 = 1.113$), strategic competence ($f^2 = 0.922$), organizing competence ($f^2 = 0.905$), and opportunity competence ($f^2 = 0.637$). This result indicates that relationship competence ($f^2 = 0.030$) is not as effective as a predictor of entrepreneurial competencies. This indicates that most of the effect sizes of each dimension of entrepreneurial competencies are large. The effect size of the relationship between entrepreneurial competencies and innovation performance is large ($f^2 = 1.691$). Also, the result shows that both dimensions of environmental complexity ($f^2 = 0.551$) and environmental dynamism ($f^2 = 1.044$) are effective moderators of entrepreneurial competencies and innovation performance.

Figure 1. Effect Sizes of the Regression Relationships
f Square



Source: Authors' Idea based on findings

5. DISCUSSION

The outcomes of the present study supported the impact of entrepreneurial competencies on innovation performance of informal sector SMEs in the context studied. It also confirmed the moderating effect of business environment on entrepreneurial competencies and innovation performance. The study tested nine hypotheses in which the first seven hypotheses pertained to the direct impact of entrepreneurial competencies on innovation performance. Meanwhile, the eighth and ninth hypotheses investigated the moderating impacts on environmental complexity and environmental dynamism, respectively on entrepreneurial competencies and innovation performance.

The results from the study revealed that six entrepreneurial competencies dimensions, namely organising competence, conceptual competence, learning competence, risk-taking competence, strategic competence and opportunity competence significantly related to innovation performance. This result is consistent with existing studies of Ahmad *et al.* (2010) that found a strong relationship between entrepreneurial competencies and business

success in Malaysian SMEs. Within the context of spin-offs, Rasmussen, Mosey and Wright (2011) observed that entrepreneurial competencies like championing, leveraging, and opportunity refinement support the capacity of the firms to gain credibility. On the other hand, our findings are inconsistent with that of Baum (1994) who concluded that entrepreneurial competencies (including vision, organisation skill, growth goals, opportunity skill and industry experience) have little or no influence on the performance of firms in the United States. Likewise, our findings are also inconsistent with Mitchelmore and Rowley (2013) who found that four clusters of entrepreneurial competences (including personal and relationship, business and management, entrepreneurial and human relations competencies) were less valuable to sampled entrepreneurs in England and Wales. Both inconsistencies are large because Baum's, Mitchelmore's and Rowley's measure of entrepreneurial competencies are different from that used in this current study. Most researchers acknowledge that entrepreneurial competence is a multidimensional construct whose definitions and measures are often divergent in the field of entrepreneurship (Man et al., 2002; Mitchelmore and Rowley, 2010). This implies that, because of the elusiveness of the phenomenon, it is difficult if not impossible, to conclude that entrepreneurial competence positively influences business performance. Instead, we are of the view that scholars should be relatively straightforward with regards to what aspect or measure of entrepreneurial competence that impacts or does not impact business performance.

Amongst the six entrepreneurial competencies examined, this present study found, in order of hierarchical arrangement, conceptual competence, learning competence, risk-taking competence, strategic competence, organising competence, and opportunity competence to be a valuable support for Nigerian informal sector SMEs' drive for innovation performance. This present study suggests that theorists and practitioners that examine entrepreneurial competencies from a developing theory perspective, especially the present context should emphasise these set of competencies. Whereas this result is slightly consistent with existing studies, at the same time, it reflects some level of disparity with previous studies that were carried out in other developed and developing economies. For example, Ahmad *et al.* (2010) reported that opportunity recognition, capacity to act on opportunity, conceptual thinking, learning and personal effectiveness are the entrepreneurial competencies that matter most in determining business success among Malaysian SMEs. Within the context of spin-offs, Rasmussen, Mosey and Wright (2011) observed that entrepreneurial competencies like championing, leveraging, and opportunity refinement support the capacity of the firms to gain credibility. Hence, given the peculiarity of the context of our study as a developing economy in which resource constraint challenges are a significant characteristic of the informal sector of MSMEs operations, our study makes a significant contribution, especially in the light of the unique prioritisation of entrepreneurial competencies that we have suggested. However, our study finds some dimensional alignment with specific aspects of competencies that have been reported in previous studies. For example, Ibidunni, Mozie and Ayeni (2020) found that the capacity of entrepreneurs in the informal sector to demonstrate risk-taking skills is an essential competency for driving innovation performance. This is, also, consistent with Covin and Slevin (1989), who observed that risk-taking competencies might cause small firms in hostile environments to exploit capital investments needed to develop or maintain a competitive edge. Likewise, risk-taking competence is critical in the Nigerian informal sector SMEs industry,

primarily because of the need for entrepreneurs to survive in the business environment beyond all odds (Solesvik, 2012; Adegbuyi et al., 2018).

Quite surprisingly, our study did not support the direct impact of relationship competency on SMEs' innovation performance. This finding is contrary to existing studies like Man et al. (2008) that found the influence of relationship competencies on the long-term performance of SMEs given the interferences of competitive scope and organisational capabilities. The differential patterns of investigation between our study and existing studies may be reasons for mixed results in the findings of this present study compared to existing studies. Our study did not examine the competitive capabilities of the firm; instead, we focused the internal capacity of the firm to network with other firms in the industry, rather than to examine their collaborations amidst industry competitiveness. Hence, the impact of relationship competencies in SMEs cannot be under emphasised depending on the perspective from which it is explained. This study revealed that the business environment is a contingent factor in determining the effectiveness of entrepreneurial competencies towards enhancing innovation performance of informal sector SMEs. The SMEs operators and policymakers can, therefore, focus on entrepreneurial development initiatives that pertain to the relevant aspects of individuals' skills and behaviour. Specifically, the areas of interest include organising, conceptual, learning, risk-taking, strategic, opportunity and risk-taking competencies as essential dimensions of entrepreneurial competencies. The study also supported the moderating impact of environmental dynamism on entrepreneurial competencies and innovation performance. This result suggests that informal sector entrepreneurs in Nigeria who can complement their competencies with the changing business environment will achieve higher innovative performance. The finding of this study is consistent with Ahmad *et al.* (2010) that reported environmental dynamism as a contingent factor between entrepreneurial competencies and small business success. In addition to that, this study also revealed that entrepreneurial competencies are useful towards mitigating environmental pressures resulting from operational turbulence and erratic policy changes, as the firm drives towards improving innovation outputs. This result is inconsistent with Brush, de Bruin and Welter (2009) and Ogundana (in print). For instance, Ogundana (in print) described the Nigerian environment as exogenous where entrepreneurs have little or no control over it.

On the contrary, we observed that entrepreneurs within the Nigerian Informal SMEs could control their environments when they possess crucial entrepreneurial competence, including risk-taking competence. As such, we conclude that the Nigerian entrepreneurship environment is becoming more endogenous rather than exogenous. This means that Nigerian entrepreneurship can control and moderate the influence of their external environment through their entrepreneurial competence. Finally, there was evidence of an inverse moderating effect of environmental complexity on the relationship between entrepreneurial competencies and innovation performance of SMEs in Nigeria. This result from our study is consistent with previous studies like Baum, Locke and Smith (2001) that established an almost insignificant effect of environmental complexity on venture growth of small firms. Meanwhile, Dolz, Iborra and Safón (2019) affirmed that entrepreneurial ambidexterity is required for SMEs to cope within highly complex environments that are characterised by financial and economic crises. Hence, the findings

from this present study suggest that the capacity of SME operators in Nigeria to achieve innovation performance is not necessarily a function of high and low dimensions of environmental challenges. This may be evidenced by the fact that entrepreneurs, looking beyond external environmental interventions and shocks, strive within the confines of their limited resources to ensure the survival and resilience of their firms' operations.

6. CONCLUSION

In this study, the focus was to investigate entrepreneurial competencies as a viable pathway for improving the innovative performance of SMEs in Nigeria's informal sector and the contingent roles of business environment on that relationship. Based on the findings of the multivariate analysis, the study draws the conclusion that entrepreneurial competencies, especially organising, conceptual, learning, risk-taking, strategic, opportunity and risk-taking competencies are essential for achieving higher innovation performance. The study also suggests that entrepreneurial competencies are useful towards mitigating environmental pressures resulting from operational turbulence and erratic policy changes, as the firm drives towards improving innovation outputs. This study contributes to the entrepreneurial competence literature by highlighting the most critical competencies alongside the relevant contingencies. This is crucial, primarily as entrepreneurs operate within a resource-constrained environment. As such, this study provided a practical guide that will enable entrepreneurship stakeholders, including entrepreneurs and policymakers, to identify priority competence areas for investment. This study also contributes to the existing literature and theory on entrepreneurial competencies by investigating the role of entrepreneurial competencies within the context of the informal sector of an emerging economy. In our view, this is an essential contribution since the understanding of entrepreneurial competencies have been limited mainly to explaining entrepreneurial success within economies that operate within economies that are well regulated by government policies and laws. However, within informal sector economies of developing economies, the understanding of the interventionist perspective of entrepreneurial competencies in improving innovation performance of SMEs have been limited in the literature. Consequently, the adoption of exploratory factor analysis to examine what exact entrepreneurial competencies apply to the current context's informal sector gave insight to risk-taking competence as a novel and an essential dimension of entrepreneurial competency that support the innovation performance of SMEs.

The study also contributes to the strategic management and entrepreneurship literature on entrepreneurial competencies by providing insights about how firms in the informal sector can adopt intrinsic competencies within turbulent and dynamic environments to innovate and sustain performance. Also, the findings from this study provide a theoretical springboard for propelling further studies across the informal sector of developing economies that share similar characteristics with the current context under study. Establishing the theoretical fit of entrepreneurial competencies across a robust informal sector base of developing economies will supply insights about the roles of culture and the different characteristics that further explain the dynamism of the theory across global economies. Also, the findings of this present research can benefit entrepreneurial educators and trainers towards the design of training programmes and entrepreneurship curriculum that reflect the appropriate skill set required to drive entrepreneurial firms. The

reports provided from this study reflect the right entrepreneurial competencies that are required by aspiring, emerging and existing entrepreneurs in the informal sector to achieve higher levels of innovation performance within the changing and highly competitive business environment. As such, the curriculum design and training modules should reflect adequate capacity building for the entrepreneurs. The valuable contributions, however, calls for further research attention that can extend the entrepreneurial competencies theory by investigating a cross country perspective of developing economies to understand the macro-level effects of entrepreneurial competencies on SMEs sustainability.

DISCLOSURE

The authors declare no conflict of interest.

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