

Entrepreneurial Orientation and Innovation Performance: The Moderating Role of Competitive Environment

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Abstract

With the advent of entrepreneurial orientation literature both strategic aspect of human resource management and entrepreneurial activities in the organizations have been among the most remarkable subjects of research papers. In the literature, the effect of Entrepreneurial Orientation (EO) on SMEs innovation performance has been extensively examined. The latest papers started to extensively investigate the effects of third variables in this relationship. Also, in recent years some researchers have studied and shown significant interactions between Entrepreneurial Orientation (EO) and innovation performance. In this study, we focus on the important role of the competitive environment on the relationship between entrepreneurial orientation and SMEs innovation performance. For this purpose, a questionnaire was prepared and data were collected from the SMEs that operate in different industries in Nigeria. The collected data from questionnaires were analyzed with SPSS and PLS software programs. Analyses results indicated that competitive environment moderated the relationship between entrepreneurial orientation and SMEs innovation performance.

Keywords Competitive environment; Entrepreneurial orientation; Innovation performance

Introduction

An entrepreneurial orientation of a firm cannot be discussed without the internal and external environment which it operates in. There is a direct relationship between business strategies, market uncertainty, and competitive intensity. Under such market conditions where environmental uncertainties are lower; turbulence is relatively less and stability is higher while the risk-taking tendencies of firms strengthen [1]. The need for SMEs to behave strategically in a globally competitive environment in order to compete or to gain competitive advantage while trying to maintain it are important in realizing these firms' level of sensibility. In a destructive competition environment, how can competitive advantage or superiority be achieved? The first answer that comes to mind is that if SMEs carefully analyze market dynamism and display market-oriented, high entrepreneurial tendency and innovative strategy or strategic innovation, they may maintain their assets and competitive advantages [2]. One of the important tools of enterprises with improved entrepreneurship competence that ensure competitive advantage is the ability to display innovative strategy. Basically, the entrepreneurial orientation is among the most researched topics in the entrepreneurship domain, accumulated evidence on the EO performance relationship remains not fully conclusive or consistent [3-5].

Most scholars have found a positive impact of EO on firm performance [6,7]. And this influence may increase over time [8]. Yet there is also inconsistent evidence, including a finding of an inverted U-shaped relationship and an insignificant relationship [9,10]. More recently, Wiklund and Shepherd proposed the concept EO as experimentation to suggest that high EO firms are bound to have a higher probability of both success and failure, which together with the

above results suggests that scholars are yet to reach a consensus understanding of this complex phenomenon [11]. Identifying this mixture of results, scholars have offered various moderating models to reconcile these inconsistencies. For instance, studies have advocated that the strength of the EO-performance link varies across several moderators internal and external to the firm, including the environment [12].

Today, in the strongly competitive environmental conditions, SMEs need to develop simple and more flexible innovative strategies in order to adjust to market dynamism [13]. Entrepreneurial orientation reflects a mentality that consists of decisions, application and continuous searching which creates new business opportunities [5]. Entrepreneurial orientation is a firm's tendency to try to reach new markets, search for new market opportunities and hold on to current markets; in short, its tendency towards being able to show marketing dynamism and its ability to react to the changes in the market. Entrepreneurial orientation or tendency is an understanding that requires being highly proactive against market opportunities and market dynamism, tolerant of risks and flexible against changes. In addition; being an innovator for change, taking risks and making innovations are distinguishing qualifications of entrepreneurial orientated firms. Being more proactive against new opportunities and being able to behave properly to innovation strategies against the mentioned opportunities are requirements of entrepreneurial orientation. Entrepreneurial orientation is a firm's tendency towards searching for new market opportunities, strengthening and restoring its current market status [14]. This orientation involves being highly proactive against market opportunities, tolerant of risks and sensible to innovations. In an economy, entrepreneurship means all kinds of efforts to make a raw material, labor force and other production resources more valuable than they were in the beginning [15]. Due to rapidly changing environment SMEs always try to renew their products, services, and business processes to adapt to changing

conditions. In order to achieve this, SMEs give importance to entrepreneurial activities and they are known as entrepreneurially oriented SMEs. Developing new business processes, new products and services, encouraging research and development processes, supporting new technologies and ideas can be seen as the indicators of entrepreneurially oriented SMEs.

The purpose of this study is to investigate the moderating effect of the competitive environment on the relationship between entrepreneurial orientation and SMEs innovation performance. First of all, depending on previous researches the underlying theory of EO is given and its relation to innovation performance was investigated. Secondly, competitive environment also investigated. Thirdly, general associations among EO, competitive environment and innovation performance are discussed and hypotheses are generated. Finally, the research method and data analysis results are given, conclusions and managerial implications are stated and suggestions for future researches are made.

Literature Review and Hypotheses

Entrepreneurial orientation and dimensions

EO is one of the most extensively researched topics in both the strategy and entrepreneurship literature, which can be traced back to Miller's seminal work. EO captures "the methods, dispositions, practices, and decision-making styles managers use to act entrepreneurially" [5]. It reflects how the firm explicitly or implicitly chooses to compete when facing emerging opportunities [4,16]. In the present study, EO is defined by adopting the definition from literature that describes it as the willingness of the firm towards adopting innovative activities and taking risks to come up with new products/services and to introduce new markets, and proactively make a move prior to its competitors in availing of new opportunities in the market [17]. Most studies suggest that EO comprises three core dimensions: innovativeness, proactiveness, and risk-taking [18]. However, there has been some debate in the literature concerning the dimensionality of EO. Researchers have argued that EO is a unidimensionality construct [19,20]. Another argument explained that EO is a multidimensional construct in which risk-taking, innovativeness, proactiveness, competitive aggressiveness, and autonomy are treated as independent behavioral dimensions [5]. To understand how EO, together with other variables, influences IP of SMEs, It is necessary first to look at the separate dimensions of EO because is important to understand how EO influences IP.

In the literature, Miller defined EO as a "three-dimensional concept: innovativeness, risk-taking propensity, and proactiveness". In the later studies, Lumpkin and Dess [5] added competitive aggressiveness and autonomy dimensions. Although most of the studies used Miller's three dimensions, innovativeness, risk-taking propensity and proactiveness [4], in this study the researcher will use innovativeness, risk-taking, pioneering, proactiveness, independence, social networking and competitive advantage EO dimensions to characterize and test entrepreneurship.

Innovativeness is stated as the most important dimension of EO in different studies and research results revealed that there is a strong relationship between innovativeness and high performance [5,21,22]. According to Rauch et al., Innovativeness refers to a "firm's behavior to generate new ideas leading to new or improved processes, products, or services" [4]. In today's business environment organizations force

themselves to become innovative more than ever before, because the first mover advantage gained with the new products and services offered to the markets create a high market share, high sales income and high financial performance [23].

Risk-taking mostly reflects the organization's willingness to break away from the tried-and-true venture into the unknown [24]. The organization of risks is a rising area of concern which can lead to a series of benefits for both SMEs owner-managers and SMEs. Khalili et al. explain that for entrepreneurs, a risk is a crucial element in the decision-making process that will accompany those who are trying to start a new business, find a new market, or introduce a new product [25,26].

Pioneering refers to the efforts a business makes to outperform its rivals [27]. Pioneering has been translated into several practical aspects such as aggressive in price competitions, introducing innovative products that outperform competitors' products, haunting the competitors in the market, and bringing special surprises to the market, etc. Boohene et al. found a strong positive relationship between pioneering of automobile artists in Cape Coast, Ghana is positively related to their firms' innovation performance [21].

Proactiveness is defined as developing and introducing new products or services before the competition to capitalize on market opportunities and influence demand [28,29]. It is argued that firms that identify and evaluate new opportunities and monitor trends in markets are regarded as proactive. Studies show that proactiveness is directly related to the extent to which firms incrementally improve existing products, develop new products, and enter into new markets [30].

Independence is seen as autonomous action by an individual or team with a view of carrying out a new business idea, or vision and following such to the end [21]. It is the independence that allowed employees to act in line with their beliefs provided the commitment is in the best interest of the organization [31].

Social networking is defined as a web-based service that facilitates online social interaction [32]. Social networking enables entrepreneurs to assemble diverse resources and information. Most studies reflect a consensus that social networking is important because they provide entrepreneurs with a diverse information and access to a large pool of resources, business opportunities, and markets [33]. Previous research has recognized that networking is a vital source of information for SMEs owner managers [34].

Competitive advantage can be defined as having a strong market share compared to competitors. The competitive advantage can be achieved through innovative products or services, price, cost, image, or transportation [35]. Mahmood and Hanafi affirmed that competitive advantage in SMEs businesses was important for their businesses performance [36]. This association was established among 165 women owner/managers of SMEs in Malaysia.

Competitive environment and dimensions

A competitive environment is connected to the achievement of SMEs, favorable business environment and healthy overall economic setting as a whole is a good predictor for enterprise performance [37]. In line with SMEDAN report that unfavorable business environment such as lack of infrastructure and support from government, community and other environmental issues poses another reason for poor SMEs development in Nigeria, lack of basic

social services and amenities such as electricity and roads, are among major obstacles that hinder the development of hotel sector in Nigeria [38]. Previous studies on innovation performance stress the need for SMEs organizations to study and adapt to their environment [39]. Many researchers suggest competitive environment has a strong influence on the EO, and IP but also moderates the relationships between EO and IP [40]. The researcher adopted environmental dynamism and environmental hostility to moderates the effect of the relationship between EO and IP of Nigerian SMEs.

Environmental dynamism, referred to the level/degree of change of modernization in an industry, change in the market, and ambiguity of competition and consumers [41]. (ED) labels the rate of change, unpredictability, volatility, and instability in the external environment [42]. Numerous studies study the relationship between environmental dynamism and entrepreneurial orientation of the firm [4,43]. High level of environmental dynamism may foster the implementation of entrepreneurial orientation in the firm in order to be more efficient in searching for the new opportunities which appear on the market [4].

Environmental hostility, hostility refers to the degree of environmental threat to the business organization [41]. Thus, hostile environment serves as a threat to a firm, such as extreme competition, beyond control business climate, lack of business opportunities and unsafe business setting [41]. Previous research investigated the relationship between environmental hostility and entrepreneurial orientation of the firm. Generally, the findings of the studies indicate that a hostile business environment is positively associated with different dimensions of firm entrepreneurial orientation.

Innovation performance

According to that IP is the integration of the overall organizational achievements that stems from its renewal and improvements efforts in a different innovative aspect of firm name, processes, products, and structure [44]. SMEs are in need of creating Innovative Performance (IP) to direct them to create new products and services and enhancing the quality of their goods and services as well as acquiring an organizational structure that meets the requirements of competitive environment [45]. Measuring IP has attracted much research. Researchers have conducted studies to measure IP by using different methodologies and indicators [46]. Some measure IP based on the single indicator, while others focus on several indicators. The researcher will analyze IP in terms of R&D inputs, patents, the adoption of advanced manufacturing technologies and new product innovations. These indicators can be used individually or combined in a multi-dimensional setting to measure IP in the broader sense.

Development of hypotheses

The literature investigating the relationship between human resource practices and EO is a new but growing field. Experts and researchers have found EO to be a very significant instrument in determining innovative performance [47]. Even though there have been numerous studies in this area, most of them were conducted in the developed world [48]. EO is one of the prominent constructs in management, strategy and entrepreneurship literature that affects firm performance. Some studies have revealed that EO dimensions are significantly and positively related to SMEs innovation performance. EO gives SMEs a first mover advantage, SMEs firms achieve higher performance. Majority studies that reported a positive and significant relationship between the two variables include Khalili et al. [45], Riani

[49], and Madhoushi [50]. Wiklund and Shepherd [11] showed EO can assist innovative SMEs in a process, creating and introducing new products and technologies, can generate extraordinary performance. Researchers and experts in the field agreed that CE of SMEs along with the skills that enable SMEs to manage their static CE resources effectively were the most important determinants of higher innovation performance [51]. SMEs firms are affected by several environmental factors; these environmental factors are rapidly changing, uncertain, and complex. Any firm that ignores or not respond to these environmental factors is bound to perform below expectation. A number of empirical studies [52], stressed that Competitive Environment (CE) serves as an important variable for predicting SMEs innovation performance. Rauch et al. also posited that CE is directly related to SMEs innovation performance [4].

In the literature, there are many studies have investigated the relationship between EO and innovation performance but the research area examining the moderating effect of CE on the relationship between EO and innovation performance is nearly empty. Depending on our review of previous studies investigating the relationship between CE, EO and innovation performance the researcher developed hypotheses and research model as shown below:

H1: Competitive Environment moderates the relationship between Entrepreneurial orientation and Research and developments.

H2: Competitive Environment moderates the relationship between Entrepreneurial orientation and Patents.

H3: Competitive Environment moderates the relationship between Entrepreneurial orientation and Adoption of Advanced Manufacturing Technologies.

H4: Competitive Environment moderates the relationship between Entrepreneurial orientation and New Products Innovations.

Methodology

Measurement instruments

In order to measure the research purpose, the researcher prepared a questionnaire depending on the scales used in previous studies in the literature. In this study, the researcher used 65 items measurement scale to measure the underlying constructs. EO scale adapted from [4,46]. This scale includes 35 items. Innovation performance scale includes 20 items and adapted from [53,54]. CE was measured by 10 items scale adopted from [55]. All the constructs have been operationalized using the 7-point Likert scales, ranging from (1=Strongly Disagree) to (7=Strongly Agree).

Sample and data collection

In order to collect data, the researcher used a questionnaire survey. Research data were collected from SMEs that operate in Northern Nigeria. The researcher collected 296 valid questionnaires from SMEs owner-managers. Data obtained from those 296 questionnaires were analyzed with SPSS and PLS SEM programs. After collecting the data, statistical analyses provided basic features about respondents. Demographic results indicated that 175 participants were male and 121 participants were female. Most of the participants had less than 11-15 years of service in the firm and the average age of majority was between 36-45 years.

Results

Factor analyses and reliabilities

The results from the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's Test of Sphericity (BTS) were examined to test whether factor analysis is appropriate. (KMO) and (BTS) showed good values (KMO statistic=0.890; BTS; 7543.396; df; 595 $p < 0.000$). Moreover, all factor loadings had significant values ranging from 0.908 (RTK) to 0.859 (SNK), no insignificant cross-loadings were detected, and all communalities exceeded the 0.50 threshold value. Cronbach's alpha values for all seven scales showed an acceptable value of 0.880 and all values for item-total correlations also were satisfactory. All communalities were greater than 0.50. The Kaiser-Meyer-Olkin value was 0.890, which exceeded the recommended value of 0.60. This indicates that more than 89% of the variance in the measures variables is common variance. The Bartlett's Test of Sphericity value from the data set showed statistical significance (chi-square with a degree of freedom 595=7543.396, $p = 0.000$). This means that there were sufficient relationships among the variables to investigate. The Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity values suggests that the dataset in this study was suitable for factor analysis.

A total of 35 variables were identified in seven factors: innovativeness, proactiveness, risk-taking, pioneering, independence, social networking, and competitive advantage. The factor loadings of the items ranged from 0.711 (SNK4) to 0.878 (PIO2). The first factor (innovativeness) was robust, with a high eigenvalue of 9.473 contributed 27.067% of the total variance, which is the highest variance in explaining the data set. On the other hand, the proactiveness measure, with an eigenvalue of 3.849, accounted for only 10.997% of the total variance. This means that innovativeness accounted for 27.067% of the variability in all variables, while proactiveness accounted for only 10.997% of the variability in all variables. Altogether, these 35 variables accounted for 74.302% of the total variance. These results show that the seven factors derived from EFA in this study are consistent with those suggested in the EO literature.

For the second group that includes the four constructs NPI, R&D, PTS, and AMT the correlation matrix was examined first. All variables correlated on an acceptable level without showing undesired extreme correlation. Firstly, KMO statistics was 0.808, thus exceeding the required minimum of 0.50. (KMO) and (BTS) showed good values (KMO statistic=0.808; BTS, 2760.601 df 190, $p < 0.000$). All communalities were greater than 0.50. Finally, Cronbach's alpha value scales showed acceptable level 0.780 and values for item-total correlations also were satisfactory. The Kaiser-Meyer-Olkin value was 0.808, which exceeded the recommended value of 0.60. This indicates that more than 80% of the variance in the measures variables is common variance. The Bartlett's Test of Sphericity value from the data set showed statistical significance (chi-square with a degree of freedom 190=2760.601, $p = 0.000$). This means that there were sufficient relationships among the variables to investigate. The Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity values suggests that the dataset in this study was suitable for factor analysis. The factor loadings of the items ranged from 0.504 (RDI5) to 0.901 (NPI3). The first factor (New product innovations) was robust, with a high eigenvalue of 4.688 contributed 32.688% of the total variance, which is the highest variance in explaining the data set. On the other hand, the research and development measure, with an eigenvalue of 3.264, accounted for only

16.320% of the total variance. This means that new product innovations accounted for 32.688% of the variability in all variables, while research and development accounted for only 16.320% of the variability in all variables. Altogether, these 20 variables accounted for 61.725% of the total variance.

The first factor (Environmental dynamism) was robust, with a high eigenvalue of 5.969 contributed 59.666% of the total variance, which is the highest variance in explaining the data set. On the other hand, the environmental hostility measure, with an eigenvalue of 1.363, accounted for only 13.633% of the total variance. This means that environmental dynamism accounted for 59.666% of the variability in all variables, while environmental hostility accounted for only 13.633% of the variability in all variables. Altogether, these 10 variables accounted for 73.300% of the total variance.

Test of the research model

In order to test the research hypotheses path analysis technique based on Partial Least Squares was used. The results of the path model are shown in the Table 1.

According to path analysis results, before including the moderating variable into the analysis the result shows that EO has a positive and significant relationship with innovative performance ($\beta = 0.825$, $t = 36.833$, $p < 0.000$). As a result, hypothesis H1 is held true. CPA ($\beta = 0.672$; $SE = 0.352$; $t = 1.911$; $p < .028$) showed a positive and significant relationship with innovative performance; therefore, H1a was supported. Similarly, independence was found positively and significantly related to innovative performance ($\beta = 0.415$, $t = 4.102$, $p > 0.000$), hence, H1b was supported. The result indicates a statistical insignificance ($\beta = 0.259$, $t = 1.210$, $p > 0.114$), in the relationship between innovativeness and innovation performance. As a result, hypothesis H1c is not supported. Equally, ($\beta = 0.403$, $t = 0.201$, $p > 0.420$), the result indicated a statistical insignificance in the relationship between PIO and innovative performance. As a result, hypothesis H1d is not supported. The research findings in this study ($\beta = 0.183$; $SE = 0.046$; $t = 3.961$; $p < 0.000$), indicated a statistical significance in the relationship between PRA and innovation performance. As a result, hypothesis H1e is supported. ($\beta = 0.398$; $SE = 0.043$; $t = 9.260$; $p < 0.000$); the result indicated a statistical significance in the relationship between risk-taking and innovation performance of Nigerian SMEs. As a result, hypothesis H1f is supported. ($\beta = 0.259$; $SE = 0.067$; $t = 3.864$; $p < 0.000$), the result indicated a statistical significance on the relationship between social networking and innovation performance. As a result, hypothesis H1g is held true. ($\beta = 0.242$; $SE = 0.064$; $t = 3.759$; $p < 0.000$), the result indicated a statistical significance on the relationship between environmental dynamism and innovation performance. As a result, hypothesis H2 is held true. ($\beta = 0.572$; $SE = 0.345$; $t = 1.658$; $p < 0.049$), the result indicated a statistical significance in the relationship between environmental hostility and innovation performance of SMEs in Nigeria.

The present study also applied the standard bootstrapping procedure with a number of 5000 bootstrap samples and 296 cases to assess the significance of the path coefficients of both direct and moderating relationships. The bootstrapping result shows that the relationship between two of the independent variables and the dependent variable are significant at $p < 0.05$; five of the independent variables are significant at $p < 0.01$; while two are not significant.

Hypotheses	Relationship	Beta	STDE	t-value	p Values	Result
H1	Entrepreneurial orientation -> Innovation Performance	0.825	0.022	36.833	0.000	Supported
H1a	Competitive Advantage -> innovation performance	0.672	0.352	1.911	0.028**	Supported
H1b	Independence -> innovation performance	0.415	0.101	4.102	0.000***	Supported
H1c	Innovativeness -> innovation performance	0.259	0.214	1.210	0.114	Not-Supported
H1d	Pioneering -> innovation performance	0.043	0.216	0.201	0.420	Not-Supported
H1e	Proactiveness -> innovation performance	0.183	0.046	3.961	0.000***	Supported
H1f	Risk taking -> innovation performance	0.398	0.043	9.260	0.000***	Supported
H1g	Social Networking -> innovation performance	0.259	0.067	3.864	0.000***	Supported
H2	Environmental Dynamism -> innovation performance	0.242	0.064	3.759	0.000***	Supported
H3	Environmental Hostility -> innovation performance	0.572	0.345	1.658	0.049**	Supported

***Significant at 0.01, **significant at 0.05,*significant at 0.1 (1-tailed).
a,b,c,d,e,f,g are the significance of the Innovation performance relationship of entrepreneurial.

Table 1: Hypotheses Testing (Direct Relationships).

Discussion and Conclusion

In this study, the role of CE and EO on innovation performance was investigated. The results indicated that CE has a full moderating role between EO and innovation performance. Although there are many studies examining CE innovation performance relationship EO relation in the literature, the moderating role of CE between EO and innovation performance has not been studied deeply. According to Covin and Slevin [6], depending on the behavioral model of entrepreneurship, firm-level entrepreneurship is becoming more attractive because processes and behaviors are manageable. SMEs level activities can be managed with the help of organizational strategies, structures, systems and cultures [6].

If SMEs pursue entrepreneurially oriented goals such as being more proactive, encouraging innovativeness and risk-taking and competing more aggressively, the entrepreneurial activities automatically will turn to provide necessary support such as human capital, sufficient training programs, and competitive compensation and reward systems to SMEs in order to achieve its goals and strategies in the long run. As a result, EO's contribution to innovation performance is expected to automatically increase. Depending on the literature and analyses results SMEs owner-managers are suggested to determine the necessary level of entrepreneurial activities set their roles and activities to meet the need of entrepreneurial goals of organizations. Therefore the positive contribution of EO activities on SMEs innovation performance can increase.

However, this study has some limitations. First of all, the survey was conducted on manufacturing SMEs operating in the northern part of Nigeria. For the generalizability of findings, further researches can be conducted in all regions of Nigeria and some African countries. Also, further researchers can focus on other sectors in order to show whether any sectorial differences exist in the area. In this study moderating effect of the competitive environment was applied but further researchers can measure other strategic orientations such as marketing orientation and learning orientation. The research was designed to test relationships among variables. With this design, the

researcher took the perceptions of respondents at a certain point in time. Therefore future researchers can examine relationships on a longitudinal basis.

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