The Moderating Effect of External Environmental Characteristics on the Relationship between Entrepreneurial Orientation and SMEs Performance

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ABSTRACT

The purpose of the study is to examine the moderating effect of the external environmental characteristics on the relationship between entrepreneurial orientation and SMEs performance. Survey method of research was used by personally administering questionnaires to the owners/managers. Multistage sampling technique was used in selecting 470 SMEs that partook in the survey. SPSS 24 and PLS-SEM 3.0 were employed in the analysis of the data. The results indicated that EO significantly affects SMEs performance. Similarly, there is a significant moderating effect of environmental dynamism on the relationship between EO and SMEs performance. Surprisingly, there is an adverse moderating effect of environmental complexity and hostility on the relationship between EO and SMEs performance. While environmental diversity shows insignificant moderating effect. Therefore, the study put forward that to attain high SMEs performance. There is a need for owners/managers to consider environmental characteristics and how they affect SMEs performance.

Keywords: Entrepreneurial Orientation, External Environment, Complexity, Diversity, Hostility, Dynamism, SMEs Performance.

1. INTRODUCTION

Entrepreneurial orientation is receiving greater research interest and attention among researchers because of its significance in improving performance of the SMEs (Brown, Davidsson, & Wiklund, 2001; Covin & Lumpkin, 2011; George & Marino, 2011; Lumpkin & Dess, 1996; Rauch, Wiklund, Lumpkin, & Frese, 2009; Wales, Gupta, & Mousa, 2011; Wiklund, 1999). According to Lumpkin and Dess, (1996) and Wiklund and Shepherd, (2005), entrepreneurial orientation is one of the vital firms' resources been formulated and implemented that provide the SMEs with a basis for making entrepreneurial choices and decisions.

Several studies have discovered and illuminated that the EO improves the survival and continuity of the SMEs and aid in achieving superior performance (Al-Swidi & Mahmood, 2012; Awang, Yusof, Kassim, Ismail, & Zain, 2009; Fatoki, 2014; Idar & Mahmood, 2011; Moorthy et al., 2012). These researchers further argued that SMEs that have high risk-taking tendencies are innovative and proactive, hence, have chances of enhancing their performance. Miller (1983) expounded that EO allows SMEs to undertake process, products and services innovation, undertake risky entrepreneurial activities and be proactive. Furthermore, EO aids SMEs to respond to the needs and demand of the customers in the market by introducing new product/services or modifying existing ones, initiating new and valuable ideas for the SMEs, support SMEs process management and enhance SMEs practices and other activities (Jianfeng Jia, Wang, Zhao, & Yu, 2014; Lumpkin & Dess, 1996).

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In theory, the resource-based view (RBV) assumes that different firms possess different types of resources that serve as a source of competitive advantage and performance. The firms' resources are categorised into two; tangible and intangible resources. However, it has been argued in the literature that only the intangible resources of the firms that give them a competitive advantage and superior performance. The intangible resources that serve as a source of competitive advantage to the firms have specific characteristics; namely, value, rare, difficult to imitate by competitors, and the resources are not substitutable (Barney, 1991; Hunt & Morgan, 1995; Penrose, 1959; Peteraf, 1993). Therefore, EO is regarded as one of the intangible resources of the firms that help firms in generating competitive advantage and for achieving superior performance (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Miller, 1983; Zahra, & Covin, 1995). Consequently, lack of, or insufficient level of entrepreneurial orientation in a firm may result in a low level of innovation, competitive disadvantage and reduced or low firm performance. These could further have negative consequences on the economy in general.

Even though, it is clear that EO is essential for firms to attain superior performance (Barney, 1991; Grant, 1991, 1996; Teece & Pisano, 1994). However, previous studies have paid less research attention to empirically examine the effect of EO on SMEs performance in developing countries like Nigeria. There is a paucity of research that has examined the moderating role of the four external environmental characteristics (dynamism, diversity, hostility and complexity) on the relationship between EO and SMEs performance in one study (Chi, 2006; Chi, Kilduff, & Gargeya, 2009). However, one or two environmental characteristics were studied (Aminu, 2015; Hakala & Kohtamaki, 2011; Shehu & Mahmood, 2014). However, it is not sufficient to give a clear picture of the external environment and its relationship with EO and SMEs performance.

As a result, the study fills in the gaps in EO and SMEs performance research by examining the moderating effects of external environmental characteristics (dynamism, diversity, hostility and complexity) on the relationship that between EO and SMEs performance in Nigeria. Therefore, the objective of the study is to examine the effects of EO on SMEs performance and also to examine the moderating role of external environmental characteristics on the relationship between EO and performance of SMEs in Nigeria.

Thus, the study contributes to the body of knowledge in five ways. Firstly, the study contributes to the EO and firm performance research in this field by empirically testing the effect of EO on SMEs performance. Secondly, it provides a scientific report from a developing country that is grossly underrepresented in the literature. Thirdly, the study contributes toward the further understanding of RBV. Fourthly, to provide a framework of EO-SMEs performance relationship that includes four dimensions of the external environment (dynamism, diversity, hostility and complexity). Lastly, it provides implications to the owners/managers of the SMEs to what level of EO is needed in which environmental characteristics. The structure of the paper is as follows after this section is followed by a literature review, theoretical framework, methodology, analysis and results, implications and trend for further studies.

2. LITERATURE REVIEW

2.1 Entrepreneurial Orientation

Entrepreneurial orientation is regarded as one of the vital resources in firms that has leads to the achievement of competitive advantage and better performance (Covin, Green, & Slevin, 2006; Covin & Slevin, 1988; Miller, 1983). According to Lumpkin and Dess, (1996), Wiklund and Shepherd, (2003) and Walter, Auer, and Ritter, (2006) EO is seen as a decision making and taking styles, process, practices and behaviour that enable firms entry into new/established market with new or modified products/services in response to changes in environment and demand of the customers.
Hence, proper utilization of EO in the firms results to identifying and exploitation of several market opportunities, attaining certain level innovation and facilitate market entry/penetration (Baker, & Sinkula, 2009; Boso, Story, & Cadogan, 2013; Hakala & Kohtamaki, 2011; Pehrsson, 2016; Slater & Narver, 1995). EO also helps the firms by been first-movers to create and introduce products/services into the market, thereby, gaining so many advantages that aid in drastically creating competitive advantage (Kerin, Varadarajan, & Peterson, 1992; Lieberman & Montgomery, 1988). Similarly, EO helps to improve firms capabilities of identifying and exploiting market opportunities in competitive markets.

Literature indicated that EO is defined and operationalised using three or five dimensions. For example, Covin and Slevin, (1989) defined and operationalised entrepreneurial orientation using three dimensions namely, innovativeness, proactiveness and risk-taking. Whereas Lumpkin and Dess, (1996) defined and operationalised entrepreneurial orientation using five dimensions by adding autonomy and competitive aggressiveness. Kraus, Rigtering, Hughes, and Hosman, (2012) and Wildund (1999) maintained that the majority of researchers in this field are using three dimensions of EO. These dimensions are innovativeness, proactiveness and risk-taking (Aminu, 2015; Covin & Slevin, 1989; Kemelgor, 2002; Samson, 2015; Shehu, 2014; Slevin, 1993; Zahra & Garvis, 2000).

Innovativeness refers to the ability of the SMEs to introduce new ideas, product, process, marketing, and structural innovation that strengthen the ability of the SMEs to achieve competitive advantages and overall performance. Covin and Slevin (1988) saw innovativeness as the willingness of SMEs to attach more importance to "research and development, new products, new services, improved product lines, and global technology in the industry they are operating". In the words of Aminu (2015), innovativeness has to do with the capabilities of the firm to provide new and creative ideas on how things are done in the firm. Moreover, several studies found that the innovation in a firm is playing a crucial role with regards to enhancing its performance (Dorenbosch, Engen, & Verhagen, 2005; Ramamoorthy, Flood, Slattery, & Sardessai, 2005).

Proactiveness is the second dimension identified in the literature. Lumpkin and Dess (1996) defined proactiveness as the “acting opportunistically to shape the business environment by influencing trends, creating demand, and becoming a first of pioneer mover in a competitive market. Zahra and Covin (1995) emphasised that proactiveness leads to that attainment of competitive advantage for SMEs through “initiating the first move, planning novel requests and market, and by charging high prices” (Jalali, Jaafar, & Ramayah, 2014). According to Hughes and Morgan (2007), proactiveness is the ability the SMEs to look into the future regarding opportunities and demand in the business environment and response by creating and developing new products/services to be ahead of the competitors in that industry. In other words, SMEs can forecast into future and act on the customers’ needs in the market via developing and supplying into the market new products, services, or processes fast and ahead of the competitors (Lumpkin & Dess, 2001; Lyon, Lumpkin, & Dess, 2000). Breendale (2001), maintained that a proactiveness is vital to any given firm and that it is one of the needed resources for firms to gain competitive advantage.

Risk taking is the ability and willingness of SMEs to be “bold and aggressive in searching, sighting and tracking entrepreneurial opportunities with a high rate of risks that could yield a high rate of returns (Katz, Brockhaus, & Hills, 1993). That is why Frese, Brantjes and Hoorn (2002) and Lumpkin and Dess (1996) emphasised that SMEs with specific risk-taking propensity are likely to become successful firms. Risk-taking has usually been described as the uncertainties that come into entrepreneurial activities. Tolerance to risk is the propensity, willingness and ability of an entrepreneur to accept, take, endure and bear risks resulting from running a business. Cerri (2012) asserted that entrepreneurs prefer to take moderate risks in
situations where they have some degree of control for risks in releasing profits. Therefore, it is hypothesised that:

H1: Entrepreneurial orientation is positively and significantly related to SMEs performance in Nigeria.

2.2 External Environment

The external environment in which the SMEs reside keep on changing. The changes could take along about opportunities or threats to the SMEs. Therefore, the SMEs need to bring into line their strategies with the activities in the external environment. Different characteristics have different effects on SMEs (Wang, Chen, & Chen, 2012). This implies that different SMEs may experience the effect of the characteristics of the environment on its operations and others. According to Chi et al., (2009) four environmental characteristics affect the SMEs, diversity, complexity, dynamism and hostility/magnificence.

Environmental diversity is one of the important characteristics of the external environment. Diversity is the extent to which the SMEs are facing “homogenous or diffuse conditions” in their business activities (Chi et al., 2009). Environmental Complexity is explained as the heterogeneity and concentration of the elements in the external environment of the SMEs (Keats & Hitt, 1988). Complexity refers to the degree to which SMEs are required to possess, own and control sophisticated knowledge and process regarding its products, services, customers and other resources (Chi et al., 2009).

Environmental dynamism is another important environmental characteristics. Jiao, Alon, Koo, and Cui (2013) explained dynamism as difficulties facing SMEs as a result of sudden changes taking place in the external environment. These definitions have emphasised that SMEs are unavoidable to experience challenges owing to the high level of unpredictable and uncertain circumstance in the external environment in which they are residing (Muddaha & Kheng, 2016). Consequently, this demand for innovative, risk-taking and proactive measures from the SMEs owners/managers to meet to generate the required competitive advantage and to achieve better performance. Therefore, environmental dynamism signify the unpredictability and uncertainties that SMEs face as they interrelate and interact with the external environmental elements (Perez-Luno, Wiklund, & Cabrera, 2010). Environmental dynamism as the rate at which products/services keep on changing, frequent changes in the preference of customers and operational environment (Milliken, 1987; Sharman & Dean, 1991). The dynamism in the external environment of SMEs has a considerable effect on entrepreneurial behaviour of the SMEs (Suarez & Lanzolla, 2007; Subramaniam & Youndt, 2005). As a result, environmental dynamism. Likewise, research that established that dynamism in the external environment is likely to affect the entrepreneurial orientation and the performance of the SMEs (Perez-Luno et al, 2010; Wiklund & Shepherd, 2005). Therefore, the more dynamic the external environment is, the more it requires a high level of EO, to efficiently and effectively respond to the changes taking place such as needs of the customers, technological innovation and competition to achieve better performance.

Environmental hostility is the unfavourable external factors in the external environment that affect the SMEs in diverse ways (Zahra & Garvis, 2000). Environmental hostility is the degree of threats SMEs are facing as a result of the vigour, intensity and multifaceted of competition (Calantone, Schmidt, & Benedetto, 2003). Therefore, environmental hostility is as a result of rapid and drastic changes that keep occurring and that lead to radical changes in the firms, placing intense regulatory procedures and burdens on the firms and the presence of aggressive competition among firms, shifting of customers demand and constant technological innovation. (Agarwal & Ramaswami, 1992; Steve Werner, 1996; Shaker A Zahra & Garvis, 2000). Hostility in the external environment can also result from perceived market competition, market
uncertainties, and products/services uncertainties (Sharfman & Dean, 1991; Tang & Hull, 2012). Therefore, SMEs need to harness and deploy the resources at their disposal and continue searching for opportunities in the external environment to be able to manage and succeed in a hostile environment (McGee & Rubach, 1996; Zahra, 1993). Nevertheless, as environmental hostility intensifies, SMEs need to change from present needs of customers to pursue the satisfaction of the likely needs to continue sustaining the competitive advantage and performance (Narver & Slater, 1998).

Consequently, there is a paucity of studies that have established a model connecting the four environmental characteristics (diversity, complexity, dynamism and hostility) into the EO and SMEs performance relationship. Majority of the studies in this aspect concentrate on looking at one or two environmental characteristics, while ignoring the studies of all the four characteristics in one studies (Jiao et al., 2013; Muddaha & Kheng, 2016; Muddaha, Kheng, & Sulaiman, 2018; Perez-Luno et al., 2010; Suarez & Lanzolla, 2007; Tang & Hull, 2012). Thus, to fill the identified gaps in the literature, the study hypothesised that:

H2: environmental diversity positively and significantly moderates the relationship between Entrepreneurial orientation and SMEs performance in Nigeria.

H3: environmental complexity positively and significantly moderates the relationship between Entrepreneurial orientation and SMEs performance in Nigeria.

H4: environmental dynamism positively and significantly moderates the relationship between Entrepreneurial orientation and SMEs performance in Nigeria.

H5: environmental hostility positively and significantly moderates the relationship between Entrepreneurial orientation and SMEs performance in Nigeria.

2.3 SMEs Performance

SMEs performance is essential in strategic management studies and is usually used as a dependent variable (Bayo-Moriones, Billon, & Lera-Lopez, 2013; Foss, 1997; Richard, Devinney, Yip, & Johnson, 2009). It is added that, even though SMEs performance is essential, there is no agreement among researchers about its definition, dimensionality and its measurement (Combs, Crook, & Shook, 2005; Crook, Ketchen, Combs, & Todd, 2008; Richard et al., 2009).

Moullin (2003) defined performance as how well the firms are being managed and "the values of the firms are delivered to the customers and stakeholders. Zahra and Covin (1995), see SMEs performance as the engine that drives the marketing and financial performance of the SMEs. Similarly, Ricardo and Wade (2001) defined SMEs performance as the ability of the SMEs to succeed in achieving their defined aims, goals and objectives. Therefore, in the literature, the measurement of SMEs performance is divided into financial and nonfinancial performance (Liang, You, & Liu, 2010). Financial performance of the SMEs are measured by using indicators such as sales growth, profitability, return on investment, market share, and economic value added (Li, Su, Liu, & Li, 2011). On the other side, nonfinancial performance indicators differ with the firms’ characteristic, strategies and other factors (Jaworski & Kohli, 1993). However, Santos and Brito (2012) expounded seven components of SMEs performance; these include profitability, market values, growth, employee satisfaction, customer satisfaction, environmental performance and social performance. Hence, these components are made up of financial and nonfinancial performance indicators.

2.4 Theoretical Framework (Resource Based View)

This study is supported by the resource-based view (RBV). The RBV is seen as one of the theoretical perspectives for achieving a better performance utilising internal and specific bundle of resources by the SMEs (Amit & Schoemaker, 1993; J. B. Barney, 1991; Collis, 1994; Grant, 1991; Peteraf, 1993; Wernerfelt, 1984). They also argue and emphasise that it is the bundle
and uniqueness of the firm’s resources that enable it to achieve a substantial competitive advantage. Based on the hypotheses of the study, the following (figure 1) conceptual framework is proposed.

![Conceptual Framework](image.png)

**Figure 1.** Framework for the Study of the hypothesised relationships.

### 3. METHODOLOGY

The study examined the moderating effects of the external environment on the relationship between entrepreneurial orientation and SMEs performance in Nigeria. The northeastern is made up of Adamawa, Bauchi, Borno, Taraba and Yobe states. The sample of the study was drawn from the 1,726 SMEs operating in north-eastern Nigeria using data from SMEDAN and NBS (2013) and SMEDAN (2012). Krejcie and Morgan (1970) sample size determination were used to compose a sample size of 313. To minimise non-response bias, 50% was added to the original sample size to make 470 (Bartlett, Kotrlik, & Higgins, 2001; Salkind, 1997). The data for the study were collected through the use of structure and self-administered questionnaire.

The study employed a multistage random sampling technique in selecting the sampling of the study. Cluster sampling was in grouping the sample according to the states. Proportional to size simple random sampling was used in determining subsample in each cluster. Simple random sampling was utilised to select the SMEs that participated in the study. Consequently, the owner/managers of the SMEs were the respondents of the study. The owners/managers are in a better position in the SMEs to answer the study questions since they are vigorously running the activities of the SMEs and they know the SMEs’ objectives, policies and accomplishments and they play an essential role in the implementation of several strategies in the SMEs (Bayo-Moriones et al., 2013; Rodrigues & Carlos Pinho, 2012). Hence, the data collected reflect the owners/managers perception (Bayo-Moriones et al., 2013; Hakala & Kohtamaki, 2011; Vij & Bedi, 2016). The data collected from the respondents were analysed using SPSS 24 and PLS-SEM 3.0.

#### Table 1 Population and sample size based on cluster sampling technique

<table>
<thead>
<tr>
<th>S/No.</th>
<th>States</th>
<th>No. of SMEs per State</th>
<th>Sample/Respondents Per State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Adamawa</td>
<td>245</td>
<td>67</td>
</tr>
<tr>
<td>2.</td>
<td>Borno</td>
<td>168</td>
<td>46</td>
</tr>
<tr>
<td>3.</td>
<td>Bauchi</td>
<td>651</td>
<td>177</td>
</tr>
<tr>
<td>4.</td>
<td>Gombe</td>
<td>255</td>
<td>69</td>
</tr>
<tr>
<td>5.</td>
<td>Taraba</td>
<td>247</td>
<td>67</td>
</tr>
<tr>
<td>6.</td>
<td>Yobe</td>
<td>160</td>
<td>44</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,726</strong></td>
<td><strong>470</strong></td>
<td></td>
</tr>
</tbody>
</table>
3.1 Measurement

A structured questionnaire was used, employing five points Likert scale, ranging from strongly disagree to strongly agree. The unit of analysis for the study is the organisation. All the measurements were adapted from previous studies. Firstly, SMEs performance was measured using 16 items adapted from the work of Santos and Brito (2012). Secondly, to measure entrepreneurial orientation, 12 items instrument were adapted from the work of Hakala and Kohtamaki (2011) which was initially rooted from the work of Covin and Slevin (1989) and Wiklund (1999). During the validity stage in the pilot study, it was noted that the first item in the questionnaire "we emphasise R&D, technological leadership and innovativeness instead of trusting only those products and services, which we have traditionally found to be good" has a triple barrel. Based on the suggestions made the item was separated into three. For example, (i) our firm emphasises R & D instead of trusting only those products/services, which we have traditionally found to be good. (ii) Our firm emphasises technological leadership. (iii) Our firm emphasises the innovation of new products and services. As a result, the item becomes 14 instead of 12 (Pulka, Ramli, & Mohamad, 2018). Thirdly, to measure the external environment, 17 item instrument was adapted from Chi (2006). The instrument is made up of four external environment characteristics, namely, diversity, complexity, dynamism and hostility.

4. ANALYSIS AND RESULTS

4.1 The preliminary Analysis and Results

The study has achieved a response rate of 65.5%. This is in agreement with the study of Aminu (2015), 89.46%, Shamsudeen, Yeng, and Hassan (2016) 66%, Gorondutse (2014) and Shehu (2014). Out of 470 questionnaires that were administered, 321 questionnaires were successfully retrieved, out of which 13 were found to be invalid. While the remaining 308 were used for further analysis. The univariate outliers were checked using the threshold of ±3.29 (Tabachnick & Fidell, 2007). Out of 308 cases, 34 were found to be univariate outliers, hence, were deleted from the data set. Two hundred seventy-four cases were considered for further analysis. The multivariate outliers were also checked, but none of the cases has exceeded the threshold. Therefore all the 308 cases were retained.

The non-response bias was analysed; the independent samples t-test is compared with Levene's test for equality of variance at a 0.05 significance level (Coakes, 2013; Field, 2009; Pallant, 2010a). The results point out that the equal variance no statistical differences between the early and late respondents. Thus, there is no problem of non-response bias in the study. This means that the sample sufficiently represents the whole population and the outcomes can be generalised.

The results of the normality show that the Skewness and Kurtosis of the metric variables of the study are within the accepted borders of less than 2 and 7 respectively (Curran, West, & Finch, 1996; Tabachnick & Fidell, 2007; West, Finch, & Curran, 1995). Therefore, it indicated that the data is normally distributed. Given the above, multicollinearity was examined by applying correlation matrix, tolerance and level of VIF for the independent variables in the study (Hair, Hult, Ringle, & Sarstedt, 2017; Hair, Ringle, & Sarstedt, 2013). As a result, the outcomes of the correlation matrix point out that no any variable in the study that is hugely correlated with other variables (Hair, Anderson, Babin, & Black, 2010; Pallant, 2010b).

The un-rotated factor analysis with 63 items was used in the analysis of the CMV. The results revealed that there is no single factor accounted for up to 50% of the total variance. The results produced 9 factors explaining an aggregate of 63.524% of the total variance. The first factor accounted for 28.122% of the total variance. This is lower than the threshold of 50% (Lowry &
Gaskin, 2014; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). It implies that the non-appearance of CMV in the study. Therefore, the data were subjected to further statistical analysis.

4.2 Assessment of the Measurement Model

4.2.1 Individual Item Reliability

The study established the reliability of the instruments through the use of standardised loading of each item in a construct, Cronbach's alpha, composite reliability and average variance extracted (AVE). The indicators with outer loadings from 0.50 are retained (Hair et al., 2017). However, items with loadings less than 0.50 were removed from the analysis (Duarte & Raposo, 2010; Hair et al., 2017; Sarstedt, Ringle, Smith, Reams, & Hair, 2014). The results showed that acceptable values of 0.50 to 0.87. The results of the Cronbach's alpha are also within the acceptable range with values higher than 0.70 except for environment diversity which has 0.677. The composite reliabilities are all above 0.70. Similarly, all the AVE exceeded the value of 0.5. Therefore, the results showed that the standardised loading, Cronbach's alpha, composite reliability and AVE have acceptable values (Gefen, Straub, & Boudreau, 2000; Meng, Reyes, Xu, & Shen, 2017; Nunnally & Bernstein, 1994). Table 2 presents the loadings, Cronbach's alpha and composite reliabilities' and the AVE.

Table 2 Loadings, cronbach’s alpha, composite reliability and average value extracted values

<table>
<thead>
<tr>
<th>Items</th>
<th>Standardized Loadings</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs Performance</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SP1</td>
<td>0.417</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP13</td>
<td>0.715</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SP14</td>
<td>0.761</td>
<td></td>
<td></td>
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<tr>
<td>SP15</td>
<td>0.793</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP16</td>
<td>0.822</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Diversity</td>
<td></td>
<td>0.677</td>
<td>0.820</td>
<td>0.603</td>
</tr>
<tr>
<td>EE1</td>
<td>0.746</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE2</td>
<td>0.816</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE3</td>
<td>0.766</td>
<td></td>
<td></td>
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<tr>
<td>Environmental Complexity</td>
<td></td>
<td>0.759</td>
<td>0.858</td>
<td>0.669</td>
</tr>
<tr>
<td>EE4</td>
<td>0.746</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>EE5</td>
<td>0.876</td>
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<tr>
<td>EE6</td>
<td>0.826</td>
<td></td>
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<tr>
<td>Environmental Dynamism</td>
<td></td>
<td>0.764</td>
<td>0.839</td>
<td>0.515</td>
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<tr>
<td>EE7</td>
<td>0.798</td>
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<tr>
<td>EE8</td>
<td>0.641</td>
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<tr>
<td>EE9</td>
<td>0.546</td>
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<tr>
<td>EE10</td>
<td>0.746</td>
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<tr>
<td>EE11</td>
<td>0.820</td>
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<tr>
<td>Environmental Hostility</td>
<td></td>
<td>0.827</td>
<td>0.872</td>
<td>0.578</td>
</tr>
<tr>
<td>EE12</td>
<td>0.790</td>
<td></td>
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<tr>
<td>EE13</td>
<td>0.794</td>
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<tr>
<td>EE14</td>
<td>0.738</td>
<td></td>
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</tr>
<tr>
<td>EE15</td>
<td>0.675</td>
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</tbody>
</table>
EE16 0.797

Entrepreneurial Orientation 0.936 0.941 0.945
EO1 0.770
EO10 0.726
EO11 0.536
EO12 0.717
EO13 0.703
EO14 0.786
EO2 0.838
EO3 0.724
EO4 0.729
EO5 0.659
EO6 0.783
EO7 0.784
EO8 0.866
EO9 0.726

4.2.2 Convergent Validity

Convergent validity was tested as recommended by (Chin, 1998; Fornell & Larcker, 1981; Hair et al., 2017). For the examination of convergent validity, the average variance extracted (AVE) of every single latent construct and the outer loadings of all the indicators are used. All the indicators have achieved acceptable values. The discriminant validity of the constructs was tested. The Fornell-Larcker criterion was observed. It used to measure the discriminant validity by comparing the square-root of the AVE values with the latent variable correlations (Hair et al., 2017). It means that reflective constructs have discriminant validity when the square root of its AVE is higher than its correlation compares to other reflective latent constructs in the same model of research work (Fornell & Larcker, 1981). All the constructs have attained the discriminant validity in the study. Table 3 presents the convergent validity of the study.

Table 3 Convergent validity

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>Complexity</th>
<th>Diversity</th>
<th>Dynamism</th>
<th>EO</th>
<th>Hostility</th>
<th>SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>0.818</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>0.763</td>
<td>0.776</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamism</td>
<td>0.594</td>
<td>0.633</td>
<td>0.718</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EO</td>
<td>0.471</td>
<td>0.465</td>
<td>0.525</td>
<td>0.743</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostility</td>
<td>0.688</td>
<td>0.645</td>
<td>0.663</td>
<td>0.602</td>
<td>0.760</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>0.252</td>
<td>0.228</td>
<td>0.346</td>
<td>0.522</td>
<td>0.248</td>
<td>0.717</td>
</tr>
</tbody>
</table>

4.3 Assessment of the Structural Model

The study assessed the structural model by applying the standard bootstrapping procedure with a total of 5000 bootstrap samples. This is done to assess the significance of path coefficients (Hair et al., 2017; Hair et al., 2013; Henseler, Ringle, & Sinkovics, 2009). Therefore table 4 presents the results of the direct and moderating relationship among the variables of the study and figure 2 present the estimate of the full research model. The results from table 4 shows that the results indicated positive and significant of EO on SMEs performance ($\beta = 0.280$, $t = 2.367$ and $P <0.01$). Unexpectedly, environmental complexity has a
negative moderating effect on the relationship between EO and SMEs performance ($\beta = -0.205$, $t = 1.633$ and $P < 0.1$). Similarly, there is an insignificant moderating effect of environmental diversity on the relationship between EO and SMEs performance ($\beta = -0.120$, $t = 0.716$ and $P = 0.237$). Conversely, there is a significant and positive moderating effect of environmental dynamism on the relationship between EO and SMEs performance ($\beta = 0.134$, $t = 1.634$ and $P < 0.051$). Lastly, there is also a negative moderating effect of environmental hostility on the relationship between EO and SMEs performance ($\beta = -0.188$, $t = 1.659$ and $P < 0.049$).

Consequently, H1 and H4 are supported, while H2, H3 and H5 are rejected.

### Table 4: Assessment of the structural model

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Relationships</th>
<th>$\beta$</th>
<th>Std. Dev.</th>
<th>T Stat.</th>
<th>P Values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>EO =&gt; SP</td>
<td>0.280</td>
<td>0.110</td>
<td>2.367</td>
<td>0.009***</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>EO = COM =&gt; SP</td>
<td>-0.205</td>
<td>0.132</td>
<td>1.623</td>
<td>0.052*</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3</td>
<td>EO = DIV =&gt; SP</td>
<td>0.120</td>
<td>0.134</td>
<td>0.716</td>
<td>0.237</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H4</td>
<td>EO = DY =&gt; SP</td>
<td>0.134</td>
<td>0.105</td>
<td>1.634</td>
<td>0.051*</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>EO = HOS =&gt; SP</td>
<td>-0.188</td>
<td>0.120</td>
<td>1.659</td>
<td>0.049**</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>

Note: ***Significant at 0.01 (1-tailed), ** Significant at 0.05 (1-tailed), * Significant at 0.1 (1-tailed).

#### Figure 2. Structural model assessment with moderator (full model).

### 4.4 Variance Explained in the Endogenous Latent Variables ($R^2$)

The $R^2$ value or the coefficient of determination is the percentage of variation in the SMEs performance (dependent variable) as explained by the EO (Elliott & Woodward, 2007; Hair et al., 2017; Hair et al., 2013). Although the acceptable level of $R^2$ value depends on the research context. Cohen (1988) recommended that the value of $R^2$ of 0.27 is being considered as substantial, 0.13 is moderate, and 0.02 is considered as a weak. While in another perspective, the value of $R^2$ should be a minimum of 0.10 as acceptable level (Falk & Miller, 1992; Hair et al., 2010). The study has achieved the $R^2$ of 31%, hence, consider as having substantial predictive accuracy. Hence, table 5 depict the results of the variance explain ($R^2$) in the study.
### Table 5 Variance explained in the endogenous latent variables ($R^2$)

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>$R^2$</th>
<th>$R^2$ Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs Performance</td>
<td>0.305</td>
<td>0.292</td>
</tr>
</tbody>
</table>

### 4.5 Assessment of Effect Size ($f^2$)

Effect size shows the relative effect of the EO on the SMEs performance through variations in the $f^2$ (Chin, 1998). The $f^2$ values of 0.02, 0.15 and 0.35 are regarded as weak, moderate and substantial. Therefore, table 6 present the results of the effect sizes of all the exogenous variables. Specifically, the effect size of EO is moderate (0.260), while that of environmental complexity (0.004), diversity (0.003), dynamism (0.029) and hostility (0.028) have small effects respectively.

### Table 6 Assessment of effect size ($f^2$)

<table>
<thead>
<tr>
<th>Latent Variables</th>
<th>$f^2$</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>EO</td>
<td>0.260</td>
<td>Moderate</td>
</tr>
<tr>
<td>Complexity</td>
<td>0.004</td>
<td>Small</td>
</tr>
<tr>
<td>Diversity</td>
<td>0.003</td>
<td>Small</td>
</tr>
<tr>
<td>Dynamism</td>
<td>0.029</td>
<td>Small</td>
</tr>
<tr>
<td>Hostility</td>
<td>0.028</td>
<td>Small</td>
</tr>
</tbody>
</table>

### 4.6 Assessment of Predictive Relevance ($Q^2$)

In assessing the predictive relevance of the model, the cross-validated redundancy measure of was used (Geisser, 1974; Hair et al., 2017; Stone, 1974; Vinzi, Chin, Henseler, & Wang, 2010). As revealed in Table 7 the $Q^2$ for the SMEs performance is above zero (0.153). This implies that the model has predictive relevance (Chin, 1998; Hair et al., 2017; Henseler et al., 2009).

### Table 7 Assessment of predictive relevance ($Q^2$)

<table>
<thead>
<tr>
<th>Endogenous variable</th>
<th>SSO</th>
<th>SSE</th>
<th>$Q^2$ (=1-SSE/SSO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs Performance</td>
<td>1,370.000</td>
<td>1,160.381</td>
<td>0.153</td>
</tr>
</tbody>
</table>

### 5. DISCUSSION

The purpose of the study is to examine the moderating effect of external environment characteristics on the relationship between EO and SMEs performance. Firstly, the results of the study found a significant and positive effect of EO on SMEs performance. Therefore, the findings of the study suggest that the SMEs need to be innovative, proactive and risk-taking to achieve better performance. Similarly, the findings imply that the higher the level or degree of EO in SMEs, the more likely for the SMEs to achieve better performance. The findings is in agreement with previous studies that found EO to be significantly and positively affecting SMEs performance (Gupta & Batra, 2015; Kovacs, Zulauf, Urkmez, Brockhaus, & Wagner, 2016; Krauss, Frese, Friedrich, & Unger, 2005; Rogo, Noor, Shariff, & Hafeez, 2017; Tricahyadinata, Hamzah, Taba, & Hamid, 2015; Wiklund & Shepherd, 2005; Zahra & Covin, 1995; Zahra & Garvis, 2000). Thus, this denotes that the findings from this study on the SMEs could contribute to enhancing the understanding of EO and SMEs performance relationship, especially, from a developing country like Nigeria.
Similarly, environmental dynamism has a significant and positive moderating effect on the relationship between EO and SMEs performance. The findings of the study point out that environmental dynamism moderates the relationship between EO and SMEs performance. The findings provide support for some of the previous studies that have established the moderating effect of environmental dynamism on the relationship between EO and SMEs performance (Nandakumar, Ghobadian, & O’Regan, 2010). It implies that to enhance the SMEs performance through EO is more effective in a highly dynamic environment of the SMEs.

However, environmental diversity of the SMEs has a positive moderating effect on the relationship between EO and SMEs performance, but the effect is insignificant. This implies that diversity of the environment does not necessarily affect the SMEs performance. Unexpectedly, the environmental complexity and hostility were found to be negatively moderating the relationship between EO and SMEs performance. It implies that the complexity and hostility of the external environment and EO do not jointly improve the SMEs performance. The circumstances could expound the results that the greater part of SMEs in Nigeria are operating in an unfriendly external environment and non-supportive business environment (Aminu, 2015). Moreover, the external environment that is characterized by sparse and insufficient infrastructure, inadequate government support, frequent changes and inconsistencies in government policies, stiff competition and unstable power supply cannot adequately support the performance of the SMEs (Adebisi, Alaneme, & Ofuani, 2015; Agabi, 2016; Femi Egbesola, 2015; Folabi, 2015; Nkechi, 2013; Rogo et al., 2017; SMEDAN, 2012; SMEDAN & NBS, 2013).

Consequently, the findings from the study have tremendously contributed to the knowledge and literature in this field. Firstly, the study contributes to the understanding of the relationship between EO and SMEs performance. It also contributes to the understanding of the moderating effect external environmental characteristics on the relationship between EO and SMEs performance. Therefore, it provides support for the resource-based view (RBV). Since the RBV is advocating that unique bundle of SMEs resources, serve as a source of its competitive advantage and superior performance (Barney, 1989; Barney, Wright, & Ketchen, 2001; Connor, 2002; Wernerfelt, 1984).

6. CONCLUSION

The study examined the moderating effect of the external environment on the relationship between EO and SMEs performance. Specifically, the study examined the moderating effect of dynamism, diversity, hostility and complexity on EO and performance relationship. Therefore, the study contributes to knowledge. The study contributes to the EO and SMEs performance research in this field by empirically testing the effect of EO on SMEs performance. Then, it provides a scientific report from a developing country that is grossly underrepresented in the literature. Similarly, the study contributes toward the further understanding of RBV. Moreover, the study provides a framework of EO- SMEs performance relationship that includes four dimensions of the external environment (dynamism, diversity, hostility and complexity). Finally, it provides implications to the owners/managers of the SMEs to what level of EO is needed in which environmental characteristics to enhance performance of the SMEs.

REFERENCES


