



## STRATEGIC PLANNING INTENSITY AND INNOVATION PERFORMANCE: THE MODERATING EFFECT OF SENSING CAPABILITY

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### Abstract

*This study examines the effect of strategic planning intensity on innovation performance and the moderating effect of sensing capability on the relationship. This study made use of data collected through a questionnaire survey from 364 owners/managers in the SMEs sub-sector of Oyo state of Nigeria through a cross-sectional quantitative approach. To test hypotheses, data collected were analysed using Pearson Product Moment Correlation and Multiple Regression Analysis. The results suggest that strategic planning intensity, sensing capability, and demographic variables had a significant effect on innovation performance for owner/manager in the SMEs sub-sector of Nigeria. Owners/managers in the SMEs sector achieve high innovation performance when they attain a high level of strategic planning intensity and a high sensing capability. In addition, the moderating effect of sensing capability on the relationship between strategic planning thoroughness of strategic planning intensity and innovation performance was found to be significant. Besides, with regards to the demographic variables of respondents, there was a significant positive relationship between only educational level and innovation performance. Finally, this study concludes that strategic managers can maintain and improve their innovation performance by providing support for cultivating employee sensing capability and by the development of practices that support thoroughness in strategic planning process. It is recommended that strategic managers should establish a culture that promotes effective strategic planning for increasing innovation performance and business sustainability. This is because strategic planning is not only the ability to align internal and external critical success factors but also it is a medium for efficient allocation of scarce resources.*

**Keywords:** Strategic planning intensity, Innovation performance, Sensing capability

### 1. Background

The past decade has seen rapid changes in the business environment affecting the smooth operation of many firms. An organisation can succeed in this environment only by coming up with novel ideas faster and better than key competitors. Traditional means of operating in a stable environment where change is predictable are not suitable today; instead, firms are required to continually adapt their capabilities as a significant source of superior innovation performance. The pressure for



developing new products, services, processes, and business models in the highly competitive market makes the speed of innovation a major concern for strategic managers (Wang, Cai, Liang, Wang & Xiang, 2018).

Hence, the challenge for business organisations is to rapidly redesign their capabilities and resources in the face of a turbulent environment characterized by fluctuating demand and supply (Ojha, Patel & Sridharan, 2020) all of which, if successful, translate directly into sustainable innovation performance (Teece, 2007). This call for innovation speed: the time taken from the initial development of an idea to the ultimate commercialization of such idea in the form of valuable products or services (Mardani, Nikoosokhan, Moradi & Doustar, 2018). In this context, strategic planning intensity refers to “the amount of time and energy invested in, or the emphasis on,” identification of opportunity and threat for a firm’s action plan to achieve organisational goals and objectives (Fadol, Barhem & Elbanna, 2015).

A meta-analysis of strategic planning-performance literature by McIlquham–Schmidt (2010) and Ali (2018) reveals that empirical studies on strategic planning and performance have been contradictory and inconclusive. Some studies have significantly shown that there exists a positive relationship between strategic planning and performance (Haleem, Jehangir & Ullah, 2019; Orishede, 2020; Babatunde & Sanusi, 2020). In contrast, some show that there exists a significant negative relationship between strategic planning and performance (Jong, Sim & Lew, 2019; Ojha et al., 2020; Al-Dhaafri & Alosani, 2021). Moreover, others show that the relationship is weak (Posch & Garaus, 2020). These different results imply that there is a lot more to strategic planning than devoting time and resources to its formulation and eventual implementation.

Notwithstanding, it is apparent that organisations having a high concentration of time and resources on strategic planning are more likely to outperform some other organisations with relatively simple or no strategic plan even though they may have equal capacity human and financial resources (Omotayo, Michael & Andre, 2018). The problem is, however, that organisations that focus more on onetime strategic planning than continuously adapting those strategic plans to environmental changes often experience a decline in innovation performance (Ojha *et al.*, 2020). Innovation performance here refers to the rate at which a firm successfully develops new products and services for continuous adaptation in an uncertain environment better than key competitors (Mardani et al., 2018). Conversely, organisations that can adapt their strategic planning in response to environmental changes are in a much better position of achieving their goals and objectives (Teece, 2007; Galpin, 2018). SME managers and owners have been criticized of being strategic shortsighted and lacking a long-term strategy for their business (Samuel et al., 2020). The fear is that SMEs would not attain their full performance and development potential if strategic planning is neglected, and their existence will be jeopardized (Posch & Garaus, 2020).

In this context, sensing capability dimension of dynamic capabilities has emerged as the business environment become not only more unpredictable but also characterized by frequent changes (Nieves & Haller, 2014). It has also gain prominence as organisations are increasingly required to frequently scan and respond swiftly to likely environmental opportunities and threats (Teece, 2007). To survive and thrive in such an environment of technological and market turbulence, an organisation must always be ready to identify and evaluate opportunities to improve innovative abilities (Pavlou & Sawy, 2011). Sensing capabilities in this context refers to the ability of an



organisation to continuous spot, interpret, and make sense of business opportunities and threats in its environment to ensure sustainable (Teece, 2007). Thus, sensing capabilities of an organisation could directly or indirectly influence innovation performance.

Several studies in strategic management research examine strategic planning, dynamic capability, and performance, respectively (i.e., Fadol *et al.*, 2015; Donkor, Donkor & Kwarteng, 2018). Specifically, extensive researches have been conducted on the relationship between strategic planning and performance, with most of the studies reporting controversial findings on the relationship (Khan & Khalique, 2014; Ali, 2018). Moreover, little research has, however, investigated the three concepts simultaneously to reflect the nature of the modern business environment that requires organisations to be sensitive and proactive. Specifically, there is no research to the best of the researcher's knowledge that investigated the effect of sensing capability dimension of dynamic capability on the relationship between strategic planning intensity and innovation performance. This study found this to be a critical research gap.

## 2. Conceptual Framework and Hypotheses

This study proposes that strategic planning intensity and sensing capability are essential for affecting innovation performance. Based on this, Figure 1 illustrates this study research model.

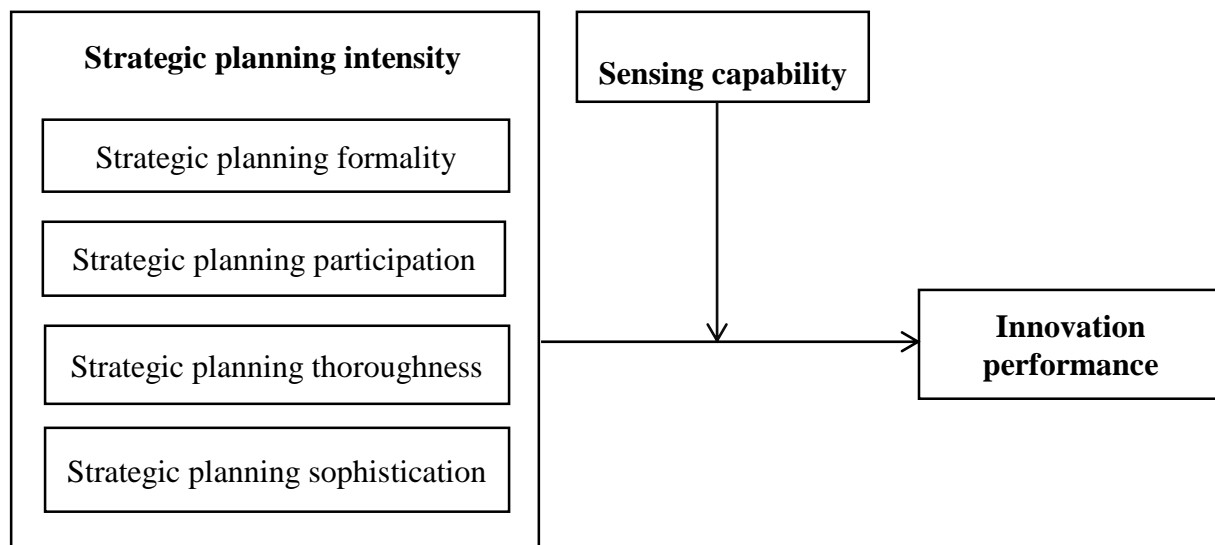


Figure 1: A Research Model

### 2.1. Innovation Performance

Innovation performance refers to the rate at which a firm successfully develops new products and services for continuous adaptation in an uncertain environment better than key competitors (Wang & Ahmed, 2004; Mardani *et al.*, 2018). The number and speed of commercialized new products and services are found to be related to innovation performance (Cheng, Song & Li., 2017). In this regard, innovation performance may be defined as a complete evaluation of organisational activities that serve as a link between strategic efforts and financial performance. Consequently,



the innovation performance of an organisation serves as a medium for achieving sustainable business through the exploration of new opportunities (Wang & Ahmed, 2004).

## **2.2. Strategic Planning Intensity**

The term “strategic planning intensity” refers to the amount of effort and emphasis put on the strategic planning process of formulation, implementation, and control (Hopkins & Hopkins, 1997; Schäffer & Willauer, 2003). Consequently, strategic planning intensity is manifested in a set of four planning effectiveness reflecting the level of emphasis on strategic planning: planning formality, planning participation, planning sophistication, and planning thoroughness (Phillips & Moutinho, 1999).

The first component of strategic planning intensity (planning formality) refers to the presence of a well-documented systematic strategic planning process to gain optimal employee commitment through a disciplined effort (Boateng, Yamoah, Amponsah & Akaffo, 2016). On the other hand, the second component of strategic planning intensity, planning participation, is the involvement of employees, especially the functional managers in formulating phase of the planning process (Ali, 2018). Employee participation in planning has been recognized as a managerial tool for not only employee motivation and empowerment during the implementation process, but also greater responsibility for the outcome of the plan (Yin, Wang & Lu, 2019). Besides, the third component of strategic planning intensity, planning sophistication, refers to the availability of planning instruments and techniques and the quality of using those instruments and techniques in supporting strategic planning (Phillips, 2000; Sørensen, 2018). The last component of strategic planning intensity adopted in this study is planning thoroughness. Planning thoroughness is the extent to which an organisation takes advantage of knowledge and information opportunities from internal and external sources during the planning process (Phillips & Moutinho, 1999; Sørensen, 2018). In essence, rather than being independent of one another, the four components play a complementary role in forming the overall construct of strategic planning intensity.

## **2.3. Strategic Planning Intensity and Innovation Performance**

In the case of innovative results, strategic planning with high-intensity levels could result in better innovation performance for organisations in turbulent environments (Fahed-Sreih & El-Kassar, 2017). Several researchers also suggest that the intensity with which organisations engage in the strategic planning process allows a high level of managerial effectiveness as strategic planning intensity tends to emphasis adaptation to the environment (Khan & Khaliq, 2014; Lipitakis & Phillips, 2016; Donkor et al., 2018; Ali, 2018). Such intensity is demonstrated in levels of formality, participation, sophistication, and thoroughness in the planning process (Phillips & Moutinho, 1999). Consequently, these intensity components of strategic planning design are likely to bring about innovation performance in an organisation depending on certain factors (Ali, 2018). Specific to each dimension of strategic planning intensity, firstly, the formality of strategic planning is a product of a thorough analysis of internal and external environments, which could indicate a firm’s willingness to explore new opportunities for competitive advantage. A well-documented strategic planning process indicates a new market trend and technological changes that are needed for innovative ideas.

Secondly, researchers have argued that allowing employees to interact with top management during strategic planning (planning participation) will lead to productive use of their ideas,



knowledge, and experience for value creation (Hansen, Amundsen, Aasen & Gressgård, 2017). Thirdly, the level of sophistication of strategic planning in terms of the use of decision-making tools and techniques is critical in innovation because it improves firms' market knowledge (Phillips, 2000; Kroh, Luetjen, Globocnik & Schultz, 2018). Lastly, higher innovation performance has been found among business organisations who have strategic planning that is thorough than those with a more incomprehensive planning practice (Osiyevskyy, Costa & Madill, 2016). For example, the use of experience from different management levels in strategic planning has been shown to lead to the generation of new ideas in knowledge-intensive environments (Karlsson, Rickardsson & Wincent, 2019).

*Hypothesis 1:* Strategic planning formality is positively related to innovation performance.

*Hypothesis 2:* Strategic planning participation is positively related to innovation performance.

*Hypothesis 3:* Strategic planning thoroughness is positively related to innovation performance.

*Hypothesis 4:* Strategic planning sophistication is positively related to innovation performance

#### **2.4. Moderating role of sensing capability**

The sensing capability has been recognized as one of the vital components of dynamic capabilities to enhance sustainable organisational performance. It is defined as an organization's capability to identify, interpret, and pursue innovative opportunities in its business environment as well as the ability to resist innovative threats (Teece, 2007). For example, through sensing capability, organisations can continuously analyse their strength and weakness, which compels them to innovate their products and processes to reduce the negative impact of threats posed by their key competitors.

Similarly, Chatwani (2019) argues that a relationship exists between strategic planning intensity and sensing capability. However, few empirical investigations have examined the moderating effect of sensing capability. Besides the main effect, this study examines the moderating effect of sensing capability on the relationship between strategic planning intensity and innovation performance. That is, it is anticipated that when organisations have a high-quality level in the four intensity dimensions of strategic planning, and when they have high sensing capabilities, they will have a higher level of innovation performance.

*Hypothesis 5:* Sensing capability will moderate the relationship between each dimension of strategic planning intensity and innovation performance.

#### **2.5. Empirical Literature Review**

There are many aspects of strategic planning associated with performance with different findings. As Posch and Garaus (2020) found that majority of the empirical studies confirmed a positive relationship between strategic planning and firm performance (Haleem, Jehangir & Ullah, 2019; Orishede, 2020; Babatunde & Sanusi, 2020). In contrast, some show that there exists a significant negative relationship between strategic planning and performance (Jong, Sim & Lew, 2019; Ojha, Patel & Sridharan, 2020; Al-Dhaafri & Alosani, 2021). Moreover, others show that the relationship is weak (Posch & Garaus, 2020). However, there are hardly any study that has considered the moderating role of sensing capability. Drawing on the resources-based theory, this study analyses how the interaction between each dimension of strategic planning intensity and sensing capability affects innovation performance.



The Resource based view (RBV) is used as the underpinning theory of this study. The resource-based view (RBV) theory of the firm is one of the widely used theory underpinning for many management studies seeking to explain the foundations of organization sustainable competitive advantage (Barney, Ketchen Jr, & Wright, 2011). The main assumption of the RBV theory is that competitive advantage of an organization is determined by their owned resources (strategic planning intensity).

### **3. Methodology**

#### **3.1. Sample and Data Collection Procedure**

The population of interest is six thousand one hundred and thirty-one (6,131) being the number of SMEs that were established on or before 2017 and operated in the Oyo state of Nigeria as contained on the website of the Small and Medium Development Agency of Nigeria (SMEDAN). Oyo State was selected because it is a prominent SMEs hub with the second largest number of SMEs in Nigeria compared to other states (National Bureau of Statistics (NBS), 2017). Sample size of 376 from a population of 6,131 for this study was obtained using the Yaro Yamane sample selection method. However, 40% of the sample size of 376 was added to take care of low response. Therefore, of 526 copies of the questionnaire distributed, 364 were used for the analysis, representing a 73% response rate.

#### **3.2. Measurement of the Study Variables**

##### **Innovation Performance**

Innovation performance was measured using four items reflecting firms' product innovativeness. The four-item scale was adapted from Wang and Ahmed (2004). In this study, the reliability was 0.74. A sample item was, "In new product and service introduction, our business is often the first-to-market".

##### **Strategic Planning Intensity**

The strategic planning intensity was measured through the use of a scale developed by Phillips (1996) and Phillips (2000) which included items for each element such as planning formality, planning participation, planning sophistication and planning thoroughness. Specifically, a sample item for planning formality (4 items) is "our business sets goals for performance on an extensive and clear basis". Also, a sample item for planning participation (3 items) is: "our business plans are established taking the views of all lower-level managers into consideration". Furthermore, a sample item for planning thoroughness (5 items) is "during our business planning process; we use experience and knowledge from different functions within our business units". Lastly, a sample item for planning sophistication (7 items) is "how frequently do you utilise Strength, Weakness, Opportunities and Threats (SWOT) analysis techniques in your organisation".

##### **Sensing Capability**

The four items of the sensing capability scale of Pavlou and Sawy (2011) were used for this study. The reliability score of these four items was .78 in this study. A sample item included, "we frequently scan the environment to identify new business opportunities".



#### 4. Results and Discussions

The results of statistical tests on the survey data are presented in four parts. The first part provides an overview of the Confirmatory Factor Analysis (CFA) which was used to confirm the construct validity of the variables in this study. The second part of this section reports the descriptive statistics (mean and standard deviation), correlations, and reliability of the research instrument. The third section presents information about hypothesis testing through the hierarchical multiple regression model. The CFA was measured using analysis of moment structures (AMOS) version 24. In contrast, the remaining analyses in the three parts were conducted with the aid of SPSS (Statistical Package for Social Sciences) version 25.

The survey provides information on four demographic variables, including (a) gender, (b) age group, (c), and education level. Approximately 71.2% of the 364 respondents were male (259), and 28.8% were female (105). In addition, 18.4% of the respondents were between the ages of 20 and 30 years (67) and 47.8% between the ages of 31 and 40 years (174). Furthermore, in terms of age group, 28.0% of the respondents were aged between 41 and 50 years (102), and only 5.8% were older than 50 years. In terms of educational level, respondents who had primary and vocational education were 11.5% (42); those with secondary and national diploma were 18.4% (67), while those with bachelor degree qualification were 51.6% (188). Besides, around 10.7% (39) of the respondents had a master's degree, and 7.7% (28) had a doctorate. Reliability value ranged between 0.70 and 0.85 for all scales even though one item was deleted from planning formality (PF3).

#### Measurement Model Evaluation

To validate the measurement scales of the research constructs (strategic planning intensity, sensing capability and innovation performance), a CFA was conducted using the following goodness-of-fit indices: (1) Normed chi-square with model fit criteria of  $CMIN/DF < 2$ ; (2) the Root Mean Square Error of Approximation (RMSEA), with model fit criteria of  $< .05$  (or  $< .08$ ); (3) the Non-Normed Fit Index (TLI or NNFI) with model fit criteria of  $> .90$ ; and (4) the Comparative Fit Index (CFI) with model fit criteria of  $> .90$  (Byrne, 2016). The results of the overall CFA provided evidence that the measurement model is a good fit with the data ( $CMIN/df=1.11$ ,  $RMSEA=.020$ ,  $TLI=.99$  and  $CFI=.99$ ). These model fit indices were above the benchmark values as proposed by Byrne (2016). Also, the factor loadings were within the range of .56 and .83 (See Appendix).

#### Descriptive Statistics, Correlations and Reliabilities

Table 2 below reports the mean and reliabilities of the research constructs as well as the correlations among these constructs. All the correlation values among the latent variables were found to be significant at  $p \leq 0.01$ . Furthermore, using the correlation coefficients, the results from the multicollinearity test among the four components of strategic planning intensity indicated that there was no evidence of multicollinearity problems ( $.24 < r < .48$ ). The relationships between each dimension of strategic planning intensity and innovation performance and the relationship between sensing capability and innovation performance were both significant. The reliability measure of Cronbach's ( $\alpha$ ) for planning formality, planning participation, planning thoroughness, planning sophistication, sensing capability and innovation performance is acceptable at .82, .85, .70, .81, .78 and .74 respectively, (Cronbach, 1951).



**Table 2: Descriptive statistics, correlations and scale reliabilities**

Variables	Mean	SD	1	2	3	4	5	6
1. Planning Formality	2.92	.96	(.82)					
2. Planning Participation	3.03	.95	.45**	(.85)				
3. Planning Thoroughness	3.13	.83	.24**	.29**	(.70)			
4. Planning Sophistication	2.93	.90	.19**	.28**	.39**	(.81)		
5. Sensing Capability	2.81	.91	.30**	.29**	.48**	.24**	(.78)	
6. Innovation Performance	3.07	.64	.35**	.36**	.51**	.36**	.70**	(.74)

Note. Significant Pearson correlations: \*\*p < .01; n = 364.

### Hierarchical Multiple Regression Analysis

In this study, hierarchical multiple regression analysis was used to analyze the collected data from the survey. Table 3 presents the results of hierarchical multiple regression of strategic planning intensity, sensing capability and innovation performance. Model 1 indicates that the control variables accounted for 2% of the variance in innovation performance. However, only the educational level was found to have a significant effect on innovation performance. That is, the higher a SMEs' owner/manager' education level, the higher his or her innovation performance. In step 2, to test hypothesis 1, the main effects of the four dimensions of strategic planning intensity accounted for an additional 34% of the variance in innovation performance.

**Table 3: Hierarchical multiple regression results for innovation performance**

	Innovation Performance			
	Model 1	Model 2	Model 3	Model 4
<b>Demographics</b>				
- Age Group	-.023	-.021	-.008	-.018
- Education	.104*	.071*	.051*	.049*
<b>Main Effects</b>				
-Planning Formality		.107*	.056*	.008
-Planning Participation		.092*	.056*	-.016
-Planning Thoroughness		.284*	.117*	-.204*
-Planning Sophistication		.105*	.098*	-.022
-Sensing Capability (SC)			.375*	-.231
<b>Interaction Effects</b>				
-Planning Formality*SC				.014
-Planning Participation* SC				.021
-Planning Thoroughness* SC				.116*
-Planning Sophistication* SC				.039
F	5.180*	34.796*	68.252*	48.444*
Adjusted R <sup>2</sup>	.028	.369	.565	.590
Δ R <sup>2</sup>		.341	.204	.029

Note: \*p < .05

The findings in Table 3 show that all four dimensions of strategic planning intensity have a significant effect on innovation performance. However, the strongest effect size (.284) was found



for planning thoroughness when compared to the other three dimensions (model 2). In step 3, the second main effect of sensing capability was entered. The result shows that an additional 28% of the variance in innovation performance was accounted for. In addition, the results show that: (i) planning formality ( $\beta = .056, p < .01$ ), (ii) planning participation ( $\beta = .056, p < .01$ ), (iii) planning thoroughness ( $\beta = .117, p < .01$ ), (iv) planning thoroughness ( $\beta = .098, p < .01$ ), and (v) sensing capability ( $\beta = .375, p < .01$ ) are directly and significantly related to innovation performance (model 3). Lastly, in step 4, the moderation effects of sensing capability on the relationships between the four dimensions of strategic planning intensity and innovation performance were examined.

Again, the findings in Table 3 show that there were overall significant moderation effects of sensing capability on the relationship strategic planning intensity and innovation performance ( $\Delta R^2 = .029$ ). However, the sensing capability was found to only significantly moderate the relationship planning thoroughness and innovation performance. Moreover, the level of strategic planning thoroughness and sensing capability had a positive effect on the rate of innovation performance. Specifically, this implies that the more “thorough” the strategic planning of SMEs are perceived to be; the more they tended to achieve high innovation performance (see Figure 2).

Those SMEs who are less thorough in their strategic planning activities realised low innovation performance, regardless of their sensing capability level. On the contrary, SMEs who are thorough in their strategic planning process attain higher innovation performance when they perceived their sensing capability to be high. This finding implies that the development of sensing capability plays a vital role in increasing innovation performance for those SMEs “thorough” in their strategic planning even though its effect size was small ( $\Delta R^2 = .029$ ).

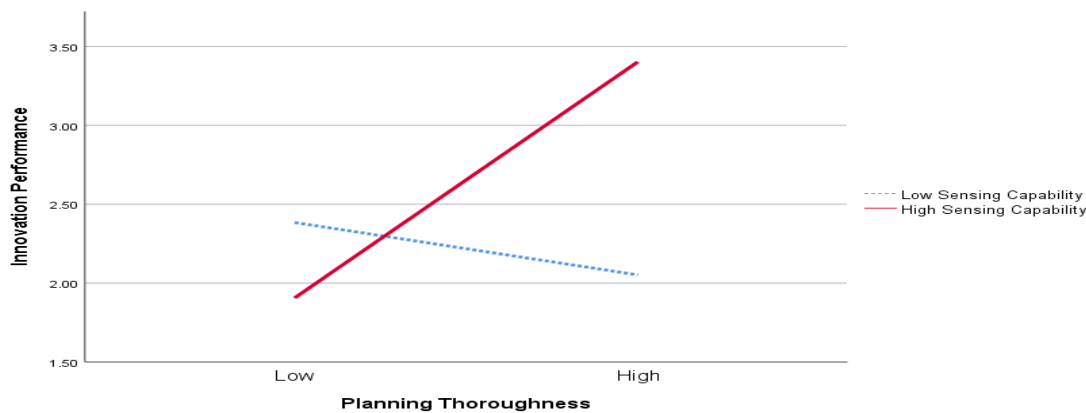


Figure 2. A moderation effect of sensing capability on the relationship between planning thoroughness and innovation performance.

Based on the threshold given by Cohen (1988), the effect size of the moderation (sensing capability) in this research model indicates a relatively small effect size ( $\Delta R^2 = .03$ ). However, Aguinis, Beaty, Boik and Pierce (2005) argued that very small effect size are common in most moderation studies of this nature that were analysed with multiple regression. Thus, given the significance of sensing capability with the context of SMEs, the present study has demonstrated the importance of its moderation effect within strategic planning intensity and innovation performance relationship.



#### 4.1. Discussion of Research findings

Generally, 59% of the variance in innovation performance was explained by strategic planning intensity and sensing capability. In terms of effect size, the four dimensions of strategic planning intensity ( $\Delta R^2 = .34$ ) were higher than sensing capability ( $\Delta R^2 = .20$ ). Furthermore, all the four dimensions of strategic planning intensity (formality, participation, thoroughness and sophistication) showed a positive and significant relationship with innovation performance. These findings are in agreement with the results in previous research studies (Osiyevskyy *et al.*, 2016; Cheng *et al.*, 2017; Dóry & Németh, 2017; Kroh *et al.*, 2018; Karlsson *et al.*, 2019). Besides, this study found that the strategic planning thoroughness has the strongest effect on innovation performance; followed by strategic planning formality and strategic planning sophistication. Correspondingly, a well-documented strategic planning process indicates (strategic planning formality) a new market trend and technological changes that are needed for innovative ideas. Therefore, organisations developing a practice of generating a written strategic plan would have higher innovation performance (Dibrell, Craig & Neubaum, 2014). Similarly, in terms of strategic planning sophistication, the findings of this study indicate that SMEs who are more disposed to the application of financial and marketing tools and techniques such as SWOT analysis are more likely to report high success rate in the introduction of new products and services to the market.

Second, SMEs owners/managers achieve the highest innovation performance when they possess a higher sensing capability. Even though the effect size of the sensing capability was small, the outcome is significant. That is, the more SMEs continuously monitor the environment to identify new business ideas and opportunities, the higher they would provide product and services that are valuable to meet the immediate needs of customers. This finding is in agreement with previous research findings (i.e., Alshanty & Emeagwali, 2019). Thus, the findings of this current study provide an important opportunity to advance the understanding of sensing capability and innovation performance relationship.

Finally, in terms of the results obtained from the analysis of moderation effects, sensing capability moderated the relationship between strategic planning intensity (i.e., planning thoroughness) and innovation performance. For SMEs who perceive themselves as being “thorough” in their strategic planning process to increase their rate of innovation performance, SMEs need to develop a high-level sensing capability, continuously scan their environment, align strategic efforts with market demands and cultivate appropriate entrepreneurial skills to take advantage of environmental opportunities.

#### 5. Conclusions and Recommendations

This study contributes to existing theory by providing a connection among research in the area of strategic planning intensity, sensing capability and innovation performance. Previously, little research has been conducted on the integration of these three domains of research. Moreover, little or no empirical evidence has surveyed the relationship among these concepts for SMEs owner/manager in Nigeria. This study found that planning formality, planning participation, planning thoroughness and planning sophistication were significantly related to innovation performance.

First, sensing capability can significantly influence SMEs’ innovation performance, and eventually, their business sustainability. Thus, as noted by Rengkung (2018), strategic managers



can play an important role in building sensing capability by generating market intelligence, continuous customer orientation and constant analysis of their strength and weakness. Furthermore, strategic managers can provide support for conditions that enhances employees' ability to spot and evaluate new business opportunities and threats.

Second, strategic managers should establish a culture that promotes effective strategic planning for increasing innovation performance and business sustainability. Specifically, strategic managers can be a catalyst for increasing strategic planning intensity as they facilitate cross-functional collaboration, and may increase employee self-confidence for identifying and solving articulated business problems (Ali, 2018).

Third, the paradigm shift in the traditional concept of strategic planning is important. For obvious reasons, the approach to strategic planning has changed from "the one best way" to be proactive and adaptive to environmental changes where SMEs are not only mindful of internal factors but also to being sensitive to the impact of external forces. When strategic planning is applied rigidly, innovation is almost impossible.

## 6. Limitations and Future Research

The findings in this study are subject to some limitations. First, the sample size used in this study is limited to only SMEs with comparable demographic profile: owner/manager in the SMEs sub-sector of Nigeria cultural background. Second, the findings of this study are based on self-report data collection method from volunteers. Hence, the inherent potential of common method predisposition may be a concern. In addition, this study explored the effect of strategic planning intensity and sensing capability on innovation performance. Future research should, therefore, concentrate on the investigation of other moderating and mediating variables in the relationships between strategic planning intensity and innovation performance. In this regard, more research on the effects of contextual and personal factors on strategic planning intensity and innovation performance is suggested. Information and Communication Technology (ICT) infrastructure and managerial experience could play a moderating role or as a predictor of strategic planning intensity. More research using these variables is recommended.

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**APPENDIX**

**Table 1: Factor Score**

	InnoP	SenseC	PlanT	PlanS	PlanP	PlanF
IP4	0.689					
IP3	0.704					
IP2	0.724					
IP1	0.693					
SC4		0.747				
SC3		0.729				
SC2		0.743				
SC1		0.703				
PT4			0.747			
PT3			0.742			
PT2			0.746			
PT1			0.76			
PS4				0.712		
PS3				0.664		
PS2				0.713		
PS1				0.605		
PP3					0.813	
PP2					0.756	
PP1					0.834	
PF4						0.766
PF2						0.782
PF1						0.824

**Note:** InnoP = Innovation performance; SenseC= Sensing capability; PlanT = Planning thoroughness; PlanS = Planning sophistication; PlanP = Planning participation; PlanF = Planning formality.