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The Impact of Entrepreneurial Orientation on Innovation Performance in Nigerian Firms: The Mediating Effect of Knowledge Management

Abudu Kehinde Funmilayo*, Mintah Clement*, Ejiofor Nnaemeka Solomon, Elvis Kwame Ofori, Nsorah Johnkingsley Onyedikachi

School of Economics and Management, Taiyuan University of Technology, Taiyuan, China
Email: *kennylayo@gmail.com, *yawmintahclement@gmail.com

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Abstract

Entrepreneurial orientation has grown in prominence as a productive structure that includes complex sets of interactions that drive economic actors' competitive skills by inducing innovation. However few econometric indices have been carried out within emerging economies. Hence this paper seeks to investigate the impact of entrepreneurial orientations on innovation performance in Nigeria, using knowledge management as a mediating factor. Before doing so, we marry the insights of several pieces of works of literature on knowledge management, and innovation performance, stemming from Organizational Theory of Innovation, and Schumpeterian Theory of Innovation. A survey design was adopted for the study. A valid sample of 329 impacted the study using the Cochran formulae for sample size determination. The research employed the Partial Least Square method for the main analysis and the Ordered Logistic Regression method for robustness check. In this study, we accept all hypotheses due to their significant and mutual relationship to the measured variable. Though knowledge management capability showed an insignificant impact on innovation performance, it correlated strongly with innovation performance in the matrix analysis. Even though the knowledge management capability construct variable was statistically insignificant on the dependent variable, there was a positive correlation. This can further be investigated in future research to ascertain reality. Hence, this research is a call on policy ramification and blueprint approach not only for firms in Nigeria but in other jurisdictions striving for innovation performance. The research findings indicate that businesses with high entrepreneurial orientation can identify new opportunities and have higher inclination to successful performance.

Keywords

Entrepreneurial Orientation, Knowledge Management Capability, Innovation Performance, Ordinary Least Square Analysis, Nigeria

1. Introduction

In today's business world, gaining a competitive edge is no longer contingent just on the ownership of physical assets or access to natural resources; rather, it depends on how well companies can innovate. The intense global competition encourages organizations, especially in third-world countries, to innovate and enhance their skills to retain a competitive edge. The ability to innovate is essential for success in the cutthroat competition of the global market; it also plays a significant part in an organization's management and production processes. According to Hassan, Iqbal et al. (2018), it is essential to note that innovation plays a significant role in the growth of a company and assists businesses in gaining a competitive edge over their competitors. Schumpeter and Nichol (1934) stated that innovative market power might be more successful than price competition. Thus, being an innovator for change, taking risks, and having a positive attitude towards innovativeness are distinguishing qualifications of entrepreneurial-orientated firms. These provide a complex premise for success for a company. Therefore our study tries to broaden policy formation by following these 4 strands of literature: 1) Why the emphasis on innovation and entrepreneurship in Nigerian businesses? 2) Whether an association exists between entrepreneurial Orientation and innovation performance; 3) The mediating function of Knowledge Management Capability; 4) Gaps in the literature. It is expanded below chronologically.

First, Nigeria offers an introductory case study for developing countries because they serve as both emerging economies and the biggest economy in Sub-Saharan Africa. Entrepreneurship has become a significant global phenomenon, particularly after 1990; its scope, character and contribution to socioeconomic growth vary depending on the location (Okikiola, 2022). Initially, scholars concentrated solely on entrepreneurial activity in industrialized countries (Sun, Doh et al., 2021). However, the availability of information has opened up opportunities to investigate such markets (Sun, Doh et al., 2021). Two factors drive interest in entrepreneurship in emerging economies. First, these nations are defined by a growing economy and a market viewpoint in which entrepreneurship plays an essential role in economic progress (Wennekers & Thurik, 1999; Kostakis & Tsagarakis, 2022). Although the citizens in these economies (particularly Nigeria) are well renowned for their entrepreneurial brilliance, study into their entrepreneurial and organizational approaches is relatively new. Second, entrepreneurship in developing countries is substantially higher than in established nations, owing to lower entry barriers and a strong need for entrance, particularly in the infor-

mal sector. Also in the recent campaign to combat unemployment and systemic issues, there has been greater recognition of the significance of innovation in the Nigerian economy (Iweala, 2022). In addition, public policies, notably in Nigeria's economy, emphasize the significance of innovation to economic growth in developing countries makes it necessary to understand the dynamism of entrepreneur innovation within this region to help promote policy initiative which can be adopted by most sub-Saharan nation with similar economic framework.

Second, the notion of entrepreneurial orientation and innovation performance has lately been a buzzword among academics and governmental decision-makers alike (Fischer, Meissner et al., 2022). Entrepreneurship orientation is critical in achieving innovative development results. The firm's degree of innovation reflects its entrepreneurial approach. The essential elements of entrepreneurial orientation have been developed in many research works. Gomezelj Omerzel and Antončič (2008) cited risk-taking, initiative, competitive aggression, client focus, and autonomy. Contrary to Jambulingam, Kathuria et al. (2005), Kathuria and Joshi (2007) argued that the six critical elements of entrepreneurial orientation—pro-activeness, innovativeness, aggressive competitiveness, risk-taking, autonomy, and motivation—were crucial. In conditions where innovation in products and processes is crucial for organizational survival and success, entrepreneurial orientation should be emphasized. Lumpkin and Dess (1996) termed entrepreneurial orientation as the actions, procedures, and choices that result in new market entry. Wiklund and Shepherd (2003) believe that combining entrepreneurial orientation with knowledge management is the key to uncovering future prospects. When businesses are able to sustain this mix successfully, the chance of underpinning innovation and generating new capabilities tends to be greater. This is because underpinning innovation requires building new competencies. Evidently, entrepreneurial orientation contributes to higher performance as it makes business owners and managers more sensitive towards adapting to the newest market needs and developments, promoting innovation. Knowledge has emerged as an essential basis of entrepreneurial Orientation, stimulating a firm's strategic approach and allowing it to conform to external changes and respond to fashionable possibilities.

Thirdly, prior studies suggest knowledge management further improves the relationships between Entrepreneur orientation and Innovation. According to Sriviboon (2020), entrepreneurial attitude may strongly predict technology acceptance and innovation performance, both of which are essential for an organization's success but are predicated on the level of knowledge management. Wu, Wang et al. (2021) claim that the firm's usage of technology, establishing commercial and innovative goals and achieving same, competent business strategies, and sophisticated research comprise innovation performance. According to Hanif and Gul (2016), to improve their overall performance, organizations must ensure that they successfully acquire, share, and use knowledge across their op-

erations. This relation however has not been well documented in the literature. Our work would try to ascertain the role it plays within the nexus of entrepreneur orientation-innovation performance and whether it is significant within the Nigerian ecosystem.

Finally, this study addresses the shortcomings in the existing literature. Firstly, most existing literature only focuses on developed to the neglect of emerging countries, thus, leaving loopholes to cover (Anwar, Clauss et al., 2022; Wilson & Perepelkin, 2022). This study addresses this loophole by focusing on Nigeria, which would provide a basis for the formulation of policy to meet the needs of such economies. Secondly, there has been no in-depth focus on the mediating role of knowledge management by any prior studies; this study also intends to cover this gap. Thirdly, most previous studies tend to adopt the traditional model for data analysis; however, in this work, we adopt the SEM-PLS model for data analysis as it is considered the best option and most suitable software in order to get a qualitative result and use Ordinary least square approach for robust analysis.

The remainder of the paper is organized following this route. Chapter 2, a literature review and themes for hypothesis formulations are presented. Chapter 3, the model and method that were used to determine the objectives of the study are outlined. In chapter 4, the findings of the study are presented, and in chapter 5, a discussion of the findings along with plausible policy recommendations are provided.

2. Literature Review and Related Theoretical Basis

The relationship between entrepreneurship orientation and innovation performance has been studied by a number of authors over the years (Adam, Fuzi et al., 2022; Beltrame, Grassetti et al., 2022), and as a result, various theoretical models, including the Organizational Theory of Innovation (Sehnem, de Queiroz et al., 2022) and the Schumpeterian Theory of Innovation (Callegari & Nybakk, 2022), have been found. These models serve as the foundations for innovation performance and organizational strategic management. It also promotes ethical decision-making and company performance. Therefore, this study will expand on the organizational and Schumpeterian theories within the Nigerian context.

Several studies examining the connection between entrepreneurial Orientation and organizational success have produced substantial results in association with business growth and performance (Clement, Huaicheo et al., 2021; Adam, Fuzi et al., 2022; Mintah, Gabir et al., 2022). Most discoveries from such studies have found a substantial and favourable entrepreneurial orientation—innovation nexus. Knowledge management has also been found to partially mediate the relationship between entrepreneurial orientation and performance Latif, Afzal et al. (2021), Sharma and Dave (2011), Idar and Mahmood (2011).

According to Cho and Korte (2014), Knowledge acquisition is likely to have a significant impact on organizational performance. It refers to the process of ga-

thering information from within and outside of a company. Furthermore, it has been asserted that organizations can increase their capability and effectiveness by turning information received into useful organizational knowledge and distributing the knowledge to strategic positions. In research conducted by Chen and Paulraj (2004), it was argued that proper knowledge acquisition enhances staff orientation, which increases the organization's ability to make rapid and timely decisions, which is crucial for excellent organizational performance.

Previous research has indicated that innovation is the most important factor in determining an individual's entrepreneurial orientation. This finding is supported by the correlation between entrepreneurial orientation and innovation (Sharma & Dave 2011; Montiel Campos, 2017). Entrepreneurial orientation is a critical component for entrepreneurial conduct in which a business innovation is developed and new prospects are regularly sought by employing current knowledge and information. Entrepreneurs are more attentive to economic dynamics and consider them as opportunities, as well as updated knowledge and insights that lead to increased innovation activity (Rodrigo-Alarcón, García-Villaverde et al., 2018; Gupta, Niranjan et al., 2020). According to Miller and Friesen (1982), a company with an entrepreneurial orientation takes a chance on product and market innovation and moves ahead of the competition. Ferreira, Coelho et al. (2020) is of the opinion that in order to gather resources and use them to improve innovation, an entrepreneurial mindset is essential. According to Alshanty and Emeagwali (2019), the performance effects of entrepreneurial orientation depend on both the internal organizational dynamics and the external environment's features. As a result, the relationship between entrepreneurial innovation and innovation performance is context-dependent. Therefore, a configurational approach can result in a greater understanding of the relationship between entrepreneurial orientation and innovation performance.

2.1. Hypotheses Development and Conceptual Framework

2.1.1. Entrepreneurial Orientation and Knowledge Management

From the perspective of its dimensions (Innovativeness, risk-taking and proactiveness), Entrepreneurial Orientation can be said to have a beneficial impact on Knowledge Management Capabilities (Lumpkin & Dess, 1996). As a consequence of their innovativeness, businesses will research and exploit opportunities. Organizations that are proactive will use their knowledge scanning strategies to better understand the future demands of their environment. Organizations that are ready to take risks are more likely to test out innovative ideas (Jiang, Wang et al., 2019).

Organizations with an entrepreneurial orientation have a greater propensity of relying on employees' knowledge and skills as significant inputs in the knowledge process (Khorakian, Mohammadi Shahroodi et al., 2019). Ramadan, Dahiyat et al. (2017) stated that corporate entrepreneurship requires a high level of knowledge and expertise. Therefore, knowledge needs to be regulated because of

the vital role it plays in identifying new opportunities and developing new ideas. In this light, the following hypotheses can be deduced:

*H*1: *Entrepreneurial orientation positively affects Knowledge management capability.*

*H*2: *Entrepreneurial orientation positively affects Knowledge Process.*

2.1.2. Entrepreneurial Orientation and Innovation Performance

It has been argued in previous academic works that entrepreneurship makes a significant contribution to a nation's development and that having an entrepreneurial mindset is necessary for growth. Accordingly, it is crucial for SMEs to have resources, practices, and structures that increase their adaptability and potential for spotting and seizing opportunities in order to sustain innovation and market success. According to Quinn (2000), one of the deciding aspects for an organization's capacity to survive and prosper is its ability to innovate. Major risk-taking leading to the provision of new goods is taken by the entrepreneur, leading to a competitive edge; SMEs must also innovate and be proactive in defining their strategic goals and processes. Only an entrepreneurial orientation can help in attaining such goals. Using the above explanation, Isichei, Agbaeze et al. (2020) concluded that there is a favourable connection between entrepreneurial orientation and innovation performance.

The impact of Entrepreneurial of SMEs innovations can be ascertained through its core dimensions which are: Pro-activeness, Innovativeness and Risk-taking. Thus, without much ado, putting into consideration the works of the likes of Abdul-Halim, Ahmad et al. (2019), Musawa and Ahmad (2018), Tang, Chen et al. (2015) and many others, it is imperative to conclude an entrepreneurial orientation can positively affect SMEs Innovation in Nigeria.

*H*3: *Entrepreneurial orientation positively affects Innovation performance.*

2.1.3. Knowledge Management Capability and Knowledge Process

Many existing studies have shown that knowledge management capability is a driving factor that links knowledge process with innovation performance, thus, the moderating role of knowledge management in knowledge process cannot be over-emphasized. Benitez, Castillo et al. (2018) in their research work, investigated how knowledge-centred culture, knowledge-oriented leadership, and knowledge-centred human resource strategies affect the link between firms' knowledge processes and their ability to innovate.

*H*4: *Knowledge management capability affects the Knowledge process.*

2.1.4. Knowledge Management Capability and Innovation Performance

Previous research has indicated that effective knowledge management capabilities boost innovation. According to Cabrilo and Dahms (2018), it is crucial to comprehend and control the complexity caused by the increase in the depth and breadth of knowledge since knowledge availability is a key factor in determining innovation. Research conducted by Darroch and McNaughton (2002) shows that

Knowledge management capabilities and innovation have some kind of beneficial correlations. Saunila (2017) aim was to determine the influence of knowledge management skills on innovation and competitiveness. According to his study; knowledge management abilities are strategically significant and positively influence innovation performance and competitiveness. Based on the aforementioned, it is apparent that innovation performance has a strong hold on knowledge management capabilities and as such innovation is impossible without knowledge. Therefore, Knowledge management can be the key to improving an organization's innovative performance.

H5: Knowledge management capability positively affects Innovation performance.

2.1.5. Knowledge Process and Innovation Performance

Past studies revealed that Businesses' performance and competitiveness can be enhanced by implementing an effective knowledge process (Andreeva & Kianto, 2012; Hanif & Gul, 2016; Kadam, Rao et al., 2019; Ferreira, Coelho et al., 2020). By utilizing tools and techniques for knowledge organization and retrieval, knowledge process ensures that both implicit and explicit knowledge used in the innovation process is available and accessible (Tang, Chen et al., 2015). It enables the organization to retrieve knowledge in an organized manner in accordance with the particular organizational structures and value chain. The knowledge process supports the development of innovation process-required competencies. Through knowledge accessibility and flow, employees can develop their formal and informal skill levels and knowledge. Hence, increase in skill can enhance the quality of innovation. (**Figure 1**)

H6: Knowledge process positively affects Innovation performance.

2.2. Research Framework

By specifying the sources from which the data was planned, acquired, and evaluated, the line of enquiry or study mirrored certain goals drawn from the research question. This aided in formulating pertinent queries and evaluating the proposed study ideas (see **Figure 2**).

More significantly, the study recognized and supported the critical roles that entrepreneurial mindset, knowledge management practices, and firm capabilities play in advancing national economic development (Abor & Adjasi, 2007; Smith & Jambulingam, 2018), to protect and preserve businesses in Nigeria and around the world, we research and design organizational knowledge management concepts, stressing their full implementation and application as a means of firms' inventive performance, decision-making, survival, and competitive advantage.

The results of this study will aid businesses in coming up with creative strategies for expanding their operations to become global corporations. This academic study adds to the body of work on organizational capacities, knowledge management methods, and entrepreneurial orientation. Not just in the context

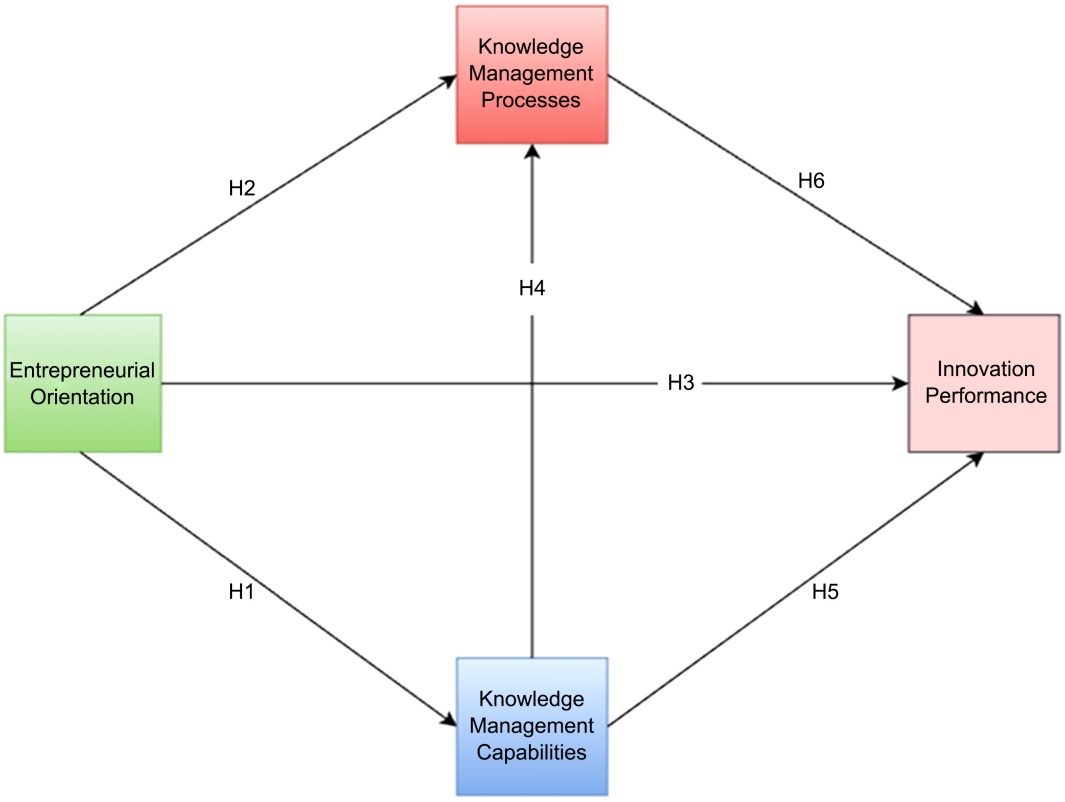

Figure 1. Conceptual framework. Source: Author's construct, 2022.

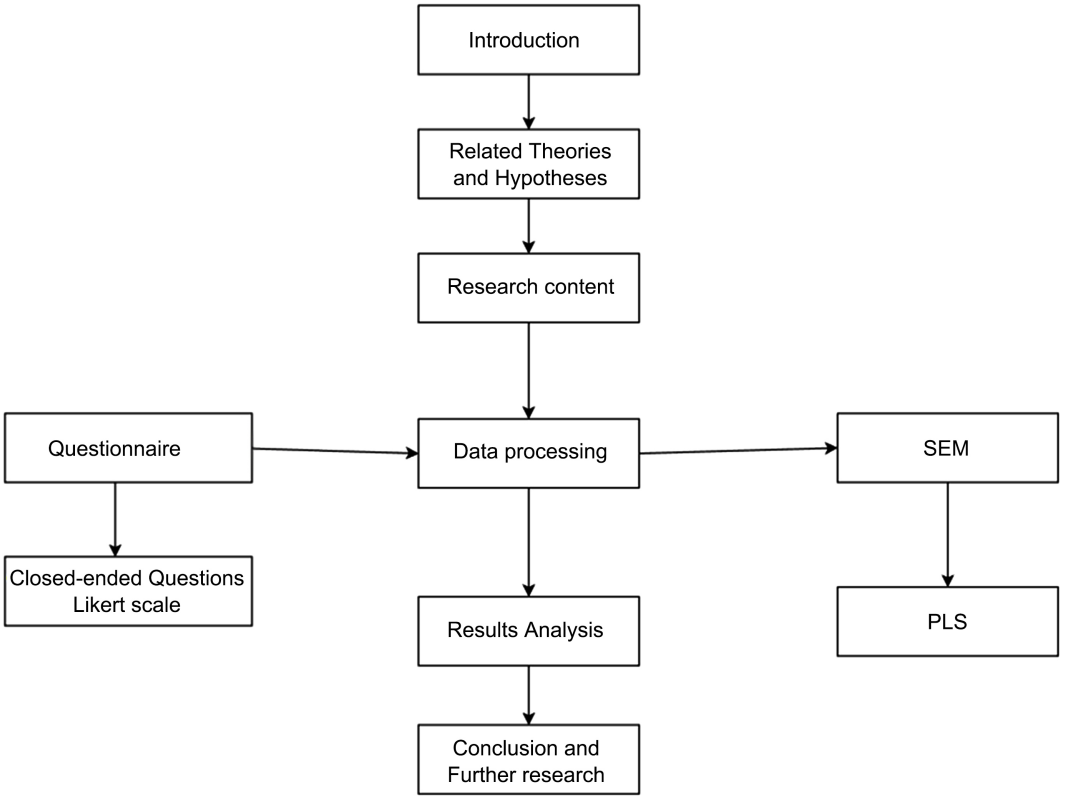

Figure 2. Research framework. Source: Author's construct, 2022.

of a Nigerian company, but for all businesses worldwide, the findings are advantageous. This research will offer ground-breaking ideas needed in terms of theory and techniques in managing and achieving business objectives and performance to managers, supervisors, subsidiary staffs, or stakeholders in enterprises. The findings demonstrate clear support for firms' capacity for knowledge management and innovative methods.

Geographically, Nigeria was included in the study. In terms of entrepreneurial orientation, knowledge management process and capabilities, organizational resources, staff recruitment quality, employee behaviour to change management, inadvertent tacit knowledge, and knowledge update programs are all influential factors for company performance (Clement, Huaicheo et al., 2021), this is an area where most businesses faced various challenges (Wilson, Perepelkin et al., 2020). Problems in business operations, growth, and management include lack of education and training, fear of discouragement in the event of losses, cost and time limits, and insufficient education (Al-Dhaafri & Alosani, 2020). The majority of the local firms failed and performed poorly very quickly as a result of this. The major goal is to determine how entrepreneurial orientation, knowledge management processes, and capabilities affect a firm's capacity for innovation.

3. Methodology

3.1. Study Area

The five principal business hubs in Nigeria were consulted for data for this study: Lagos, located in the southwestern region of the country, is controlled by the majority of corporate centers. It has the largest base for import and export with two different ports. Port Harcourtis located in the southeast and is the main base for oil and gas industries. Abujais located in the northern part. Onitsha, located in the east, is the second largest commercial base with many local factories. Ogun, located in the southwest, is the center for agriculture and deals in the production of most of the local foods, herbs and medicines. This provides in-depth criteria to able to investigate our hypothesis.

3.2. Style

This study was an exploratory study with a survey-style approach. It employed the use of quantitative research tools. This research approach was adopted to get independent and unbiased responses from respondents. To enable participation from participants with various entrepreneurial experiences across the study area, the question application was created in Google Forms. To aid in distributing the survey instrument to the intended respondents via social media platforms, particularly on WhatsApp groups for businesses and organizations and direct sharing of links, research assistants were hired. The data was collected from November 2021 to March 2022. The information gathered was based on Nigerian business knowledge management and innovative techniques that affect performance.

3.3. Data Collection Methods

The survey items used by the authors are those that have been used in previous studies in investigating the valid relationship, thus, they are reliable and valid. To collect responses, the authors used only closed-ended questions on a 1 - 5 point Likert scale (Croasmun & Ostrom, 2011). This questionnaire method was adopted to ensure that respondents cannot answer questions outside the scope of the questionnaires presented to them. The formulas used by Cochran to calculate a large sample size, as quoted by Barlett et al. (2001) in the case of a survey design approach were adopted. This was carefully followed to determine the sample size, and 329 people were chosen at a random to represent the entire population studied (Cochran, 1977).

The Cochran formula is given below;

$$n_o = \frac{Z^2 pq}{e^2}$$

Given that; e is the desired level of precision (i.e. the margin of error), p is the (estimated) proportion of the population which has the attribute in question, and q is $1-p$.

$$n = \frac{329}{0.01945} = 16915 \quad \text{Estimated proportion}$$

$$1.96^2 = \frac{(0.01945)(0.0011)}{(0.0005)^2}$$

$$n = 328.764128$$

$$\text{Approximately} = 329$$

This would be used to determine the desired sample size of 329 for the study.

In qualitative research, selecting an appropriate sample size is a topic of fundamental controversy and accompanying practical difficulties (Vasileiou, Barnett et al., 2018). Hence we went along with the conventional approach. The 3.0 version of the Smart-PLS software was used for the data analysis.

3.4. Analytical Approach

Many scholars have given appraisal as to the efficiency of SEM-PLS software in quantitative analysis works. According to Sarstedt and Cheah (2019), this software is now regarded as one of the best options for partial least squares structural equation modeling (SEM) as supported by (Mintah, Gabir et al., 2022). The PLS-SEM enables the development of a theory-based research paradigm by transforming theories and concepts into unmeasured variables (latent) and practical notions into measurements (Hair, Hult et al., 2017; Cheah, Sarstedt et al., 2018). In order to evaluate and ascertain the significance of the data, the P-values, T-statistics, factor loading, R^2 and Q^2 of the variables were all tested. Also we consider the use the Ordered Logistic Regression as the robustness test to cross-check results as we were particular about providing accurate results.

4. Results and Discussion

4.1. Descriptive Statistics of Respondents

Table 1 below shows the results of our survey's response analysis, which involved using descriptive statistics, as displayed in the figures below. According to the results, 63% of our respondents were men and only 37% were women. This shows that males receive preference for jobs at a higher rate than females. According to the data, 45.3% of respondents were between the ages of 41 and 50, 23.4% were between the ages of 51 and 60, 10.0% were between the ages of 20 and 30, 15.8% were between the ages of 31 and 40, and 5.5% were over the age of 60. The findings demonstrate that our survey did not deviate from the Nigerian labour regulation policy's stipulation that all participants in the working group must be at least 15 years old. The majority of our respondents were members of the nation's labour force. As a result, reliable information was acquired from the respondents to serve as the foundation and reason for the study. 41.0% of these respondents had master's degrees, followed by 38.3% of respondents with bachelor's degrees, 11.6% of respondents with PhD degrees, and 9.1% of respondents with secondary education. This suggests that the majority of businesses actively employ a higher proportion of respondents who have completed a Master's programme in Nigeria. It also found that 58% of respondents were married, 15% were single, and 18%, 9%, and 9%, respectively, were divorced or widowed. Regarding area work, 38.9% of respondents came from Lagos, 10.9% from Abuja, 20.7% from Onitsha, and 16.7% from Port-Harcourt, whilst 12.8% of respondents came from Ogun state.

More significantly, the study reveals that a higher % age of respondents (31.0%) work for the Dangote group of firms, followed by Nestle Nigeria (25.8%), Cadbury (11.8%), Coca-Cola (14.5%), and Honeywell flour mill (16.7%), all of which are located in Nigeria. This suggests that more Nigerians are being employed by the Dangote group of enterprises in their established businesses.

According to the study results, 67% of respondents work in management, while 27% and 27% of them are in administrative and clerical positions, respectively. This shows that respondents who actively engage in processes related to entrepreneurial orientation, knowledge management capability, and innovation performance were approached by the researchers to gather information.

4.2. Measurement Model

This study tested the construct reliability of all variables by examining their convergent validity as well as the discriminant validity. The convergent validity was investigated by examining its outer loading, Cronbach's alpha, factor loading, composite reliability, and average variance extracted (AVE).

Table 2 below shows the construct reliability tests, the factor loading values are all greater than 0.4, which implies latent variable soundly correlate on each other. According to Henseler and Fassott (2010), all values need to be more than

Table 1. Field survey.

Variables		Frequency	%
Business location (Valid)	Lagos	128	38.9
	Abuja	36	10.9
	Onitsha	68	20.7
	Port-hartcourt	55	16.7
	Ogun	42	12.8
Gender (Valid)	Female	121	36.8
	Male	208	63.2
Age (Valid)	20 - 30	33	10.0
	31 - 40	52	15.8
	41 - 50	149	45.3
	51 - 60	77	23.4
	60+	18	5.5
Marital Status (Valid)	Single	191	15
	Married	48	58
	Divorced	30	9
	Widowed	60	18
Educational Level (Valid)	PhD	38	11.6
	Masters	135	41.0
	Bachelors/Others	126	38.3
	Secondary Educ.	30	9.1
Role Played (Valid)	Accountant	18	5.5
	Supervisory	90	27.4
	Managerial	221	67.2
Business engagement	Dangote group of companies	102	31.0
	Nestle Nigeria	85	25.8
	Cadbury	39	11.8
	Coca-Cola	48	14.5
	Honeywell Flour mill	55	16.7
Total		329	100

Source: Field survey, 2022.

Table 2. Construct reliability (See **Figure A1**and **Figure A2** in Appendix).

Variables names	Code	Outer loadings	Cronbach's alpha	rho_A	Composite reliability	Average variance extracted (AVE)
Entrepreneurial Orientation	EO1	0.976	0.954	0.955	0.967	0.881
	EO2	0.973				
	EO3	0.855				
	EO4	0.945				
Knowledge Management Capability	KMC1	0.961	0.946	0.995	0.964	0.9
	KMC2	0.929				
	KMC3	0.956				
Knowledge Processes	KP1	0.775	0.833	0.831	0.901	0.753
	KP2	0.899				
	KP3	0.922				
Innovation Performance	IP1	0.873	0.813	0.814	0.89	0.729
	IP2	0.796				
	IP3	0.89				

Source: Field survey, 2022.

0.7 in order to meet the requirement for the composite reliability (CR), the composite reliability values presented in **Table 2** are between 0.89 and 0.967 hence confirming the composite reliability of all constructs. The constructs' average variance extracted (AVE) has the lowest value of 0.729 and the highest value of 0.9, thereby satisfying the requirement that value for AVE must be greater than 0.50 (Hooper, Coughlan et al., 2008). Cronbach's alpha for all constructs was also above the threshold value of 0.7 recommended by Hair, Hult et al. (2017) indicating a connection between all latent variables. The overall result of the construct reliability as shown in **Table 2** imply the accuracy of the measuring model; i.e., the questionnaire utilized in this research measures what the researcher anticipated.

In every data, a discriminant validity test is performed on each construct to determine if they are unique or just a copy of various other variables in the model analysis. The two criteria for determining discriminant validity are the Fornell-Larcker and Heterotrait-Monotrait Ratio (HTMT) (Henseler, Ringle et al., 2015). **Table 3** represents the results of the discriminant validity test.The lowest triangle of the table displays the Fornell-Larcker criterion's outcome. The results of HTMT.95 are indicated in the upper triangle, and the average variance recovered from square roots is displayed in diagonal elements. The result meets the criteria for the minimum threshold value of 0.85 for HTMT and AVE square root values greater than the values of Fornell-Larcker.

Table 4 shows the summary of the tested hypotheses. To test the hypotheses, a bootstrapping technique was employed. The table consists of the standardized beta coefficients (i.e., the values that represent the original sample), the bias-corrected confidence intervals (sample mean and standard deviation), the t-values, and highlights the statistical significance of each of these variables (p). To determine the discrepancy between the observed correlation and the model matrix, the Standardized Root Mean Square Residual (SRMR) was also examined. The outcome (0.074) shows that the model is fit for the task as proposed by Hair, Hult et al. (2017). The purpose of R^2 is to test the sufficiency of the relationship among the variables, while Q^2 has the function of establishing the predictive relevance of the endogenous constructs. To show the predictive relevance of the model and to ascertain that the values are well constructed, the Q^2 values have to be above zero. Thus, in order to assess the overall R^2 and Q^2 of the model analysis, results obtained were R^2 (0.049, 0.281, 0.393) and Q^2 (0.038, 0.199, 0.267) respectively (see Table 4 below). This result indicates that R-square has met the

Table 3. Discriminant test results for Fornell-Larcker and HTMT.

Latent Variables	1) EO	2) KMC	3) KP	4) IP
1) Entrepreneurial Orientation	**0.938**	0.224	0.46	0.521
2) Knowledge Management Capability	0.221	**0.949**	0.446	0.355
3) Knowledge Processes	0.418	0.41	**0.868**	0.687
4) Innovation Performance	0.459	0.327	0.572	**0.854**

Table 4. Results for hypotheses testing.

	Indicators	Original Sample (β)	Sample Mean (M)	Standard Deviation (STDEV)	Confidence Intervals Bias Corrected	T Statistics (|O/STDEV|)	P Values	Remarks
H1	EO -> KMC	0.221	0.221	0.066	[0.084, 0.339]	3.319	0.001	Sig
H2	EO -> KP	0.344	0.341	0.07	[0.207, 0.471]	4.916	0.000	Sig
H3	EO -> IP	0.262	0.26	0.059	[0.147, 0.377]	4.435	0.000	Sig
H4	KMC -> KP	0.334	0.336	0.058	[0.211, 0.442]	5.752	0.000	Sig
H5	KMC -> IP	0.095	0.093	0.063	[−0.015, 0.227]	1.523	0.128	Insig
H6	KP -> IP	0.423	0.427	0.07	[0.275, 0.536]	6.02	0.000	Sig
		R^2	Q^2					
	Knowledge Management Capability	0.049	0.038					
	Knowledge Processes	0.281	0.199					
	Innovation Performance	0.393	0.267		**SRMR**	**0.074**		

required threshold of not less than 70%, even though the result for knowledge management capability is less than 10% (<0.10) as recommended by Falk and Miller (1992). Q-square, however, has all results meeting the required threshold.

Six main hypotheses were tested, and five were significant against one as shown in **Table 4**. The full model was tested using partial least square as proposed by Hair, Risher et al. (2019) because it provides detailed output. The detailed result of the hypotheses is described below:

4.2.1. Entrepreneurial Orientation

The first hypothesis was to demonstrate a favorable relationship between entrepreneurial orientation and knowledge management capabilities. And our result confirms such (H1: β = 0.221, t = 3.319, p = 0.001). This indicates that a person who is entrepreneurially oriented will be better placed in the application of knowledge management capabilities. This aligns with the works of (Mansur 2022). According to the result of the second hypothesis (H2: β = 0.344, t = 4.916, p = 0.000), there is a significant relationship between entrepreneurial orientation and knowledge processes. This suggests that an entrepreneurially oriented person will have insights to knowledge update programs. The result of the third hypothesis confirms a positive link between entrepreneurial orientation and innovation performance, given the results (H3: β = 0.262, t = 4.435, and the p-value = 0.000). This corroborates our hypothetical assertion that the innovativeness and risk-taking abilities of a firm will always give it a competitive advantage over other competitors.

4.2.2. Knowledge Management Capabilities

Hypothesis four sought to describe a significant connection between knowledge management capabilities and knowledge processes. The result represented as (H4: β = 0.334, t = 5.752, p = 0.000) in **Table 4** confirms such connection. This shows that knowledge competence in businesses is a vital tool and promoting knowledge processes without having the necessary competencies is a futile effort (Hameed, Nisar et al., 2021). Hypothesis five (5) is intended to ascertain a direct relationship between knowledge management capabilities and innovation performance. However, the result (H5: β = 0.095, t = 1.523, and p = 0.128) shows that there is no relationship between knowledge management capabilities and innovation performance, as against the opinions of some past scholars such as Lumpkin and Dess (1996). This means that most Nigerian companies are lacking behind in the aspect of knowledge competencies and having knowledge-oriented leaders (Donate, González-Mohíno et al., 2022).

4.2.3. Knowledge Processes

The last and sixth hypothesis was to demonstrate a viable relationship between knowledge processes and innovation performance. The result of this hypothesis (H6: β = 0.423, t = 6.02, p = 0.000). This suggests that effective implementation of knowledge processes will give an organization an innovative attitude which

would in turn, increase its performance.

According to Table 5 below, the mediating role of knowledge management capabilities between entrepreneurial orientation and innovation performance is significant, with path coefficient (β) = 0.074, t-statistics = 2.686, and *p*-value = 0.007, the significant level was lower than 5%. Also, in ascertaining the mediating role of knowledge processes on the relationship between knowledge management capabilities and innovation performance (KMC -> KP -> IP), the result given (β = 0.142, t = 4.214, *p* = 0.000) shows a significant mediating role. The results for EO -> KP -> IP and EO -> KMC -> KP -> IP both indicate a positive and significant mediating link between entrepreneurial orientation and innovation performance, with results given (β = 0.146, t = 3.825, *p* = 0.000 and β = 0.031, t = 2.257, *p* = 0.024) respectively.

EO -> KMC -> IP, however, is unsupported under the PLS-SEM with a tenable result (β = 0.021, t = 1.35, and a *p*-value of 0.177). This result shows that knowledge management capabilities do not significantly mediate the relationship between entrepreneurial orientation and innovation performance of firms in Nigeria.

The Ordered Logistic Regression method was used as the robust analysis to ascertain if PLS does not provide any biased results and the results were complementary. Table 6 shows how to measure the statistical influence of the explanatory variables on the dependent variable. According to the test results, EO and KP have a positive significance on IP at a 1% level; *p* (0.000) 0.05; KP is also significant at a 1% level; *p* (0.000) 0.05. KMC, however, is at a 10% significant

Table 5. Mediating effect.

	Path Coefficient (β)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
EO -> KMC -> KP	0.074**	0.074	0.027	2.686	0.007
KMC -> KP -> IP	0.142***	0.143	0.034	4.214	0.000
EO -> KP -> IP	0.146***	0.146	0.038	3.825	0.000
EO -> KMC -> IP	0.021	0.02	0.016	1.35	0.177
EO -> KMC -> KP -> IP	0.031**	0.032	0.014	2.257	0.024

Note: ***1%; **5%; *10%. Source: Field survey, 2022.

Table 6. Robust estimation of the variables using the ordered logistic regression method-dependent variable.

Innovation	Coefficient	Std. err.	z	P > z	[95%	conf. interval]
Entrepreneurial Orientation	0.2025903***	0.037978	5.33	0.00	0.1281549	0.2770258
Knowledge Management Capability	0.094784*	0.0446047	2.12	0.034	0.0073605	0.1822075
Knowledge Process	0.362143***	0.0534774	6.77	0.00	0.2573293	0.4669568

Note: ***1%; **5%; *10%. Source: Field survey, 2022.

level; p (0.034) 0.05. This shows that a company or organization's entrepreneurial orientation, knowledge management process, and knowledge management capabilities have a favourable impact on innovation performance (explanatory variable). As a result, the construct factors act as catalysts for business innovation. The findings suggest that managers, supervisors, accountants, and other subsidiary staff members of businesses and organisations need to improve their knowledge management skills, entrepreneurial orientation, and processes because these factors have an impact on how well businesses perform in terms of innovation. These are crucial components that fuel growth and performance in new businesses and the ability to thrive in a cutthroat industry, as suggested by Lumpkin and Dess (1996). According to literature, enhancing a company's knowledge skills and human capital aids in quick performance improvements in a competitive market (Carneiro, 2000). Therefore, for businesses and industries to perform well enough, new ideas and practices must be incorporated into the innovation process from ideation to internalisation, implementation, and integration stages (Schöggl, Baumgartner et al., 2017).

4.3. Discussion of Results

Entrepreneurial dynamics are a prominent topic in business studies and socio-economic geography. Individuals and businesses engaged in knowledge-intensive entrepreneurship play critical roles in producing innovation. These industrial events affect collective competitiveness and renewal, lowering the danger of cities and regions becoming enslaved to fading technology and business models. However minimal work has gone the way of emerging economies. Hence this paper seeks to investigate the impact of entrepreneurial orientations on innovation performance in Nigerian firms, using knowledge management as a mediating factor. Before doing so, we marry the insights of several pieces of works of literature on knowledge management, and innovation performance, stemming from Organizational Theory of Innovation, and Schumpeterian Theory of Innovation. A survey design was adopted for the study. A valid sample of 329 impacted the study using the Cochran formulae for sample size determination. The research employed the Partial Least Square method for the main analysis and the Ordered Logistic Regression method for the robustness check.

In this study, we accept all hypotheses due to their significant and mutual relationship to the measured variable. Though knowledge management capability showed an insignificant impact on innovation performance, it correlated strongly with innovation performance in the matrix analysis. This research critically considers knowledge process and entrepreneurial Orientation as positive and significant elements impacting the Innovation performance of firms in Nigeria. These two measured significant variables should be considered as critical means for the innovation performance of firms and organizations. Captivatingly, the matrix analysis established a strong relationship between the knowledge management

process and innovation performance. This indicates that a firm's innovation and performance is dependent on the knowledge management processes and the firm's ability to innovate. Even though the knowledge management capability construct variable was statistically insignificant on the dependent variable, there was a positive correlation. This can further be investigated in future research to ascertain reality. Hence, this research is a call on policy ramifications and a blueprint approach not only for firms in Nigeria but in other jurisdictions striving for innovation performance.

Specifically, this study investigates the relationships between entrepreneurial orientation, knowledge management, and innovation performance using a conceptual model. According to our findings, entrepreneurial orientation has a favorable effect on how well a company performs in terms of innovation, and knowledge management acts as a bridge to strengthen this beneficial relationship between these two. As a result, we are able to establish that knowledge management is a crucial mechanism that harnesses entrepreneurial orientation's influence on innovation performance. This corroborates the previous findings of past scholars such as Moustaghfir and Schiuma (2013), Shin (2004), Hanif and Gul (2016) and Andreeva and Kianto (2012). Our research confirms Wiklund and Shepherd (2003)'s claim that EO could improve knowledge-based assets and company performance.

In today's environment of severe competition among SMEs, entrepreneurial attitude contributes to company success through improving innovation performance. Firms, in particular, must retain their preparedness to boost innovation and experimentation in order to offer fresh goods to fulfill performance criteria by enabling innovation. Firms' ability to take risks and spend significant resources in emerging markets allows them to innovate. SMEs should investigate new market prospects by analyzing potential difficulties and preparing for necessary change and such a move is predicated on how they can harness information leading a firm's potential to handle the knowledge process and have a robust knowledge management ecosystem.

Additional information provided insight on the role of knowledge management as a mediator between entrepreneurial orientation and innovation performance. Organizational knowledge capabilities and procedures also have a significant mediating function in the entrepreneurial orientation and innovation performance of SMEs, in addition to the developmental effect of the entrepreneurial orientation. The possibility of an employee having the necessary information promotes improved decision-making, leads to the development and innovation of new products, and gives businesses a competitive edge. Additionally, the entrepreneur may provide his employees with enough information so they can readily comprehend the organization's direction and strive toward accomplishing it.

The results of this study consequently close the gap in the literature caused by the absence of empirical research on the mediating functions of knowledge

management in the links between entrepreneurial orientation and innovation performance. Knowledge acquisition from both the external marketplace and from within an organization provides chances for businesses to recombine existing skills and knowledge and develop new knowledge that can be applied to innovation. As a result, entrepreneurial orientation can stimulate innovation in products and process practices through knowledge management. This is in correlation with the result of the study by Li, Liu et al. (2009), which revealed that the knowledge generation process mediates the relationship between organizational performance and entrepreneurial orientation.

This study has some managerial implications. Although managers appreciate the value of entrepreneurship and entrepreneurial orientation, its consequences for and demands on the rest of the business are often neglected. This study urges business managers to recognize the significance of knowledge acquisition, sharing, and application. On this note, our results imply that firms should strengthen entrepreneurial orientation in order to increase their knowledge absorption and application and innovation.

5. Conclusion and Policy Recommendation

Based on the effects of entrepreneurial attitude on the optimization of dynamic capabilities, this study presents a number of operational and management consequences. First of all, having an entrepreneurial mindset aids in SMEs reaching their innovation milestones. The findings demonstrate that HR can make use of the attributes of the entrepreneurial orientation geared towards improving innovation while concentrating on enhancing their knowledge, which strengthens knowledge capabilities and crafting compelling visions for their subordinates through knowledge sharing.

More importantly, organizations should not undervalue the role that entrepreneurship, knowledge management, and competencies play in overall performance. Because they are a crucial source of long-term competitive advantage in contemporary business, the research strengthens entrepreneurial orientation, knowledge management processes, and the capacities of companies to be proactive and innovative enough.

The methods employed in this study provide evidence that the findings are dependable and accurate for the purposes of developing policy recommendations. As a result, the following recommendations were proposed: organizational success and performance strongly depend on employees' orientation and knowledge management. Therefore, as a policy recommendation, more emphasis should be placed on knowledge preservation to prevent competitors from copying it.

Many theories serve as the foundation for business innovation performance and pave the way for high-tech industrial performance and economic success. As a policy recommendation, we encourage businesses and industries to adopt theories such as the organizational theory of innovation and the Schumpeterian

theory of innovation. This will help organizations achieve organizational success. Although the idea of an entrepreneurial attitude, as well as knowledge management methods and competencies, sets the tone for innovation performance; the development of new items, technology, and strategies to aid in corporate development, as well as risk mitigation, are crucial in this regard.

Innovation performance and success cannot be attained without integrating additional factors like management and government support, a focus on entrepreneurship, knowledge management, organizational resources, and staff recruitment quality, employee behaviour in managing change, unintentional tacit knowledge, and programs good for knowledge updating. All of these are essential to the organization's achievement of its goals. Therefore, we recommend the need for organizational policy support and structure not just for Nigerian businesses but also as a model for businesses around the world, because it has a favourable effect on economic growth and prosperity when the businesses are sustained.

5.1. Limitations of the Study

Despite the fact that the research was successful in achieving its objective, there are still some inherent restrictions. Some respondents refused to respond. Due to distance bias, there was limited time and money to cover the expense of transportation for data collection. Nonetheless, efforts were taken to collect relevant data by personal contact and the use of a Google Form, which respondents completed to the best of their abilities.

5.2. Innovation of the Paper

Our study also provided a major novelty 1) By concentrating on Nigeria—it broaden literature to cover emerging economies which has been missing 2) Novelty in the methodology—it used a SEM-PLS which provides an additional result to know direct and indirect causality relation among variables and included a robust Ordered Logistic Regression to cross-check the result to provide biasness. 3) It also provides new scope for validating established theories Schumpeterian and Organizational Theories of Innovation, entrepreneurial orientation, and knowledge management for organizational performance. The study focuses on critical theories and how they might be used to support innovative behaviour in businesses and the economy. But by taking into account the necessary elements, such as combining other elements like government and management support, entrepreneurial orientation, knowledge management, organisational resources, staff recruitment quality, employee behaviour to change management, inadvertent tacit knowledge, and knowledge update programmes as influencing company performance, this can be done effectively. The consequence of this intervention will encourage businesses to create new inventions, address internal business issues, and lower business risk, giving businesses a competitive advantage, empowering businesses, and increasing the capacity of the majority of en-

terprises. This will lessen business failures and promote the growth of entrepreneurship around the world. Consequently, the theory and practice were adopted. To reduce the failure of businesses in Nigeria, the study aims to establish an argument and support for organisational and industrial policies to help sustain and ease the failure of the majority of companies due to the inability to manage knowledge, building capabilities, and injecting innovative practises into their businesses. This will eventually enable the nation to profit economically, therefore, a topic of interest for research concentrating on its impact on corporate innovation performance.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix

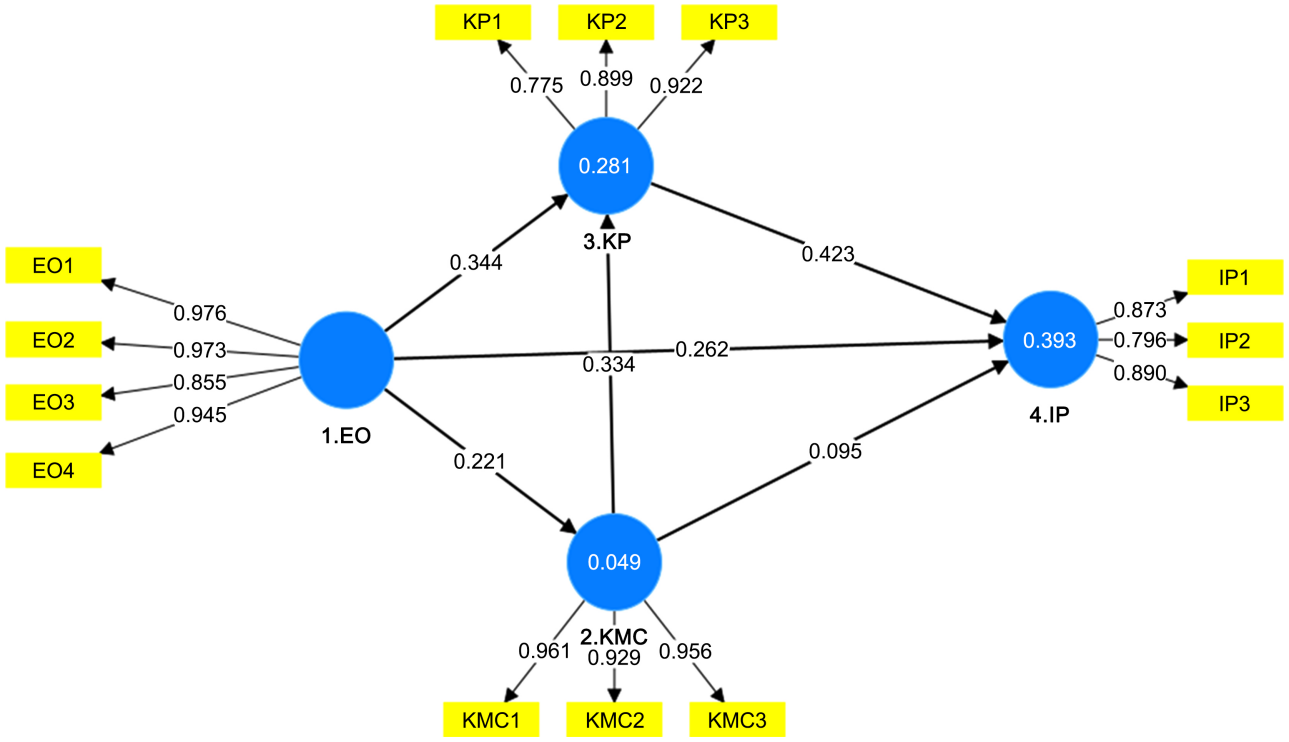

Figure A1. Factor loading result.

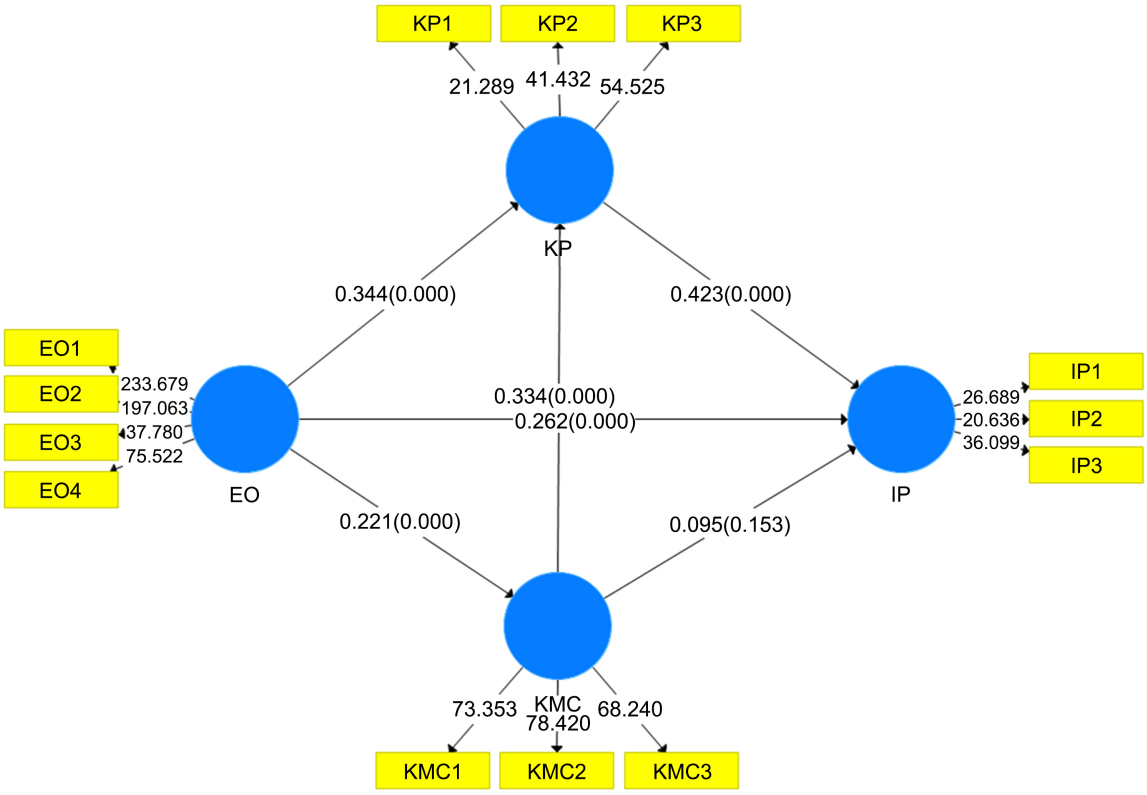

Figure A2. Bootstrapping results.