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ABSTRACT In a rapidly changing milieus, great support for innovation by top management team allows firms to sustain high market competitiveness both in the present and in the future. In actualizing this pursuit, strategic thinking and competitive intelligence are seen as drivers for innovation capability. This study investigates the nature of relationships between competitive intelligence, strategic thinking, and innovation capability. It also explores the moderating role of managerial support on these associations. In this study, a sample of 327 top and middle-level managers' responses to a survey was obtained from Nigerian Information Technology firms, using a judgmental sampling technique. The data were analyzed with Partial Least Square Structural Equation Modeling (PLS-SEM), using the SmartPLS software. The findings revealed that competitive intelligence and strategic thinking have an imperative direct and positive impact on innovation capability, and managerial support impacted positively, by meaningfully strengthening the relationships within the Nigeria context. The study mades significant contributions to the literature in terms of model development, which depicts the joint influence of competitive intelligence and strategic thinking with a moderating effect of managerial support. If deficient, this may result in inefficiency in achieving innovation capability among IT firms.

KEYWORDS Competitive intelligence, innovation capability, managerial support, PLS-SEM, strategic thinking

1. INTRODUCTION

In today's innovation-driven economy, understanding how to generate prodigious ideas is a pressing managerial priority. Initiating innovations is mostly a task handled by senior managers within an organization. Strategic thinking (ST) and competitive intelligence (CI) are used in creating novel and rational decisions relating to the past, present, and future, in areas of value addition and overall performance. Strategy aids the discovery and execution of novel ways of stimulating innovation capacity and sustaining competitiveness. In an intricate, widespread competitive environment, the uncertainty and turbulence of the contemporary world of business demands that organizational leaders and managers think strategically by responding to changes and developing an innovative model for business survival and sustainability (Haycock, 2012). ST and action have become increasingly

important within a new global environment, in which successful leadership requires a vision (Bouhali, Mekdad, Lebsirc and Ferkhad, 2015).

ST is among the expertise needed by managers. If it is not applied, there is a missing link in a business's performance (Srivastava and D'Souza, 2019; Emereole and Okafor, 2019; Bonn, 2001). ST is a modern and fundamental strategic management tool used in handling, forestalling, and proffering solutions to corporate challenges (Kettunen et al., 2020; Nickols, 2016). It can also be seen as the ability to examine and analyze the organizational external and internal environment, by foreseeing future opportunities and risks, as well as formulating alternatives and possibilities. It thereby organizes programs by absorbing opportunities and preventing risks (Olaleye et al., 2021; Hunitie, 2018). In addition, ST can also help a firm in discovering new strategies that can help in shaping competitive strategies (Dixit, Singh, Dhir, and Dhir, 2021)

Meanwhile, CI is a corporate strategy that assists firms in the managerial course of increasing performance via enhanced knowledge, internal communications, and strategic plans quality. The Society of Competitive Intelligence Professionals (SCIP, 2009) defines CI as a systematic and ethical program for gathering, analyzing, and managing any combination of data, information, and knowledge vis-à-vis the business milieu in which a company functions, and accommodates a substantial competitive advantage and enabling profiting decisions. CI's real value is to provide managers with the organizational tool to learn what the competitor will do, not what the competitor has already done.

Innovation capability is the "firms' ability to absorb, adapt and transform a given technology into specific operational, managerial and transactional routines that can lead to a Schumpeterian profit, that is, innovation" (Zawislak et al., 2012). Consequentially, innovation accrued benefits from intelligence processes, accrued to newly-provided knowledge, recognized novel opportunities, and enlarged technological paths of the external environment (Cainelli et al., 2019). Among existing firms, innovation performs vital roles as it strategically strengthens the technology-based prospect of the enterprise, with the sole aim of evolving and taming new products and processes.

Innovation is delineated as the espousal of ideas or conduct that is novel to an organization (Olaleye et al., 2021; Daft, 1978; Damanpour & Evan, 1984). Innovativeness is a procedural launching, with idea generation and development, towards extemporizing new products, services, and processes (Olaleye et al, 2020; Ainul, Hasliza & Noor, 2015; Bates & Khasawneh, 2005). All types of organizations are incapacitated with innovation, irrespective of their sizes since it is proven that innovative organizations tend to realize higher profits and market share (Prajogo & Ahmed, 2006). Hence, innovation capability (InC) is a firms' fundamental strategic asset to sustain competitive advantage (Ponta et al., 2020).

Various studies have examined ST as an antecedent (Kula and Naktiyok, 2021; Olaleye et al., 2020; Adelekan, 2020; Emereole and Okafor, 2019; Ibrahim and Elumah, 2016; Zahra and Nambisan, 2012), while few studies have analyzed the role of ST as a mediator or moderator (Bani-Hani, 2021; Alqershi et al, 2021; Fahmi et al., 2020) and even fewer studies have examined the impact of ST on InC (Rastgar, Arefi, and Hizji, 2017). Equally, studies have examined the role of CI on competitive advantage (Dixit et al., 2021), Bani-Hani, 2021), organizational performance (Irenaus, Ikechukwu & Ndubuisi, 2021), innovativeness (Olaleye et al., 2020; Hussein, Farzaneh, & Amiri, 2011), innovation performance (Poblano-Ojinaga, 2021; Caloof and Sewdass, 2020) and strategic human resource management (Alomari, 2020).

In response to gaps in research, this study proposes a new model on connection linking ST and CI to Nigerian IT firms' innovation capacity. Since the joint connection between ST, CI, and firms' InC is yet to be widely investigated, the study will attest to situational strengths that affects the relationship of the variables, and equally, add the moderating effect of managerial support (MGS) to the framework.

Following the prior discussions, this study attempts to answer the following research questions:

RQ1. Does ST impact InC among IT firms?
RQ2: Does CI impact InC among IT firms?
RQ3: Does MGS moderate these relationships?

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

2.1 Strategic Thinking and Innovation Capability

Strategic thinking is a crucial module in the change management process, where alternate strategic methods are combined, bearing in mind vital decisions on the organizational value-creating process. Bonn (2001), stated that ST is seen as the cognitive process, preceding designing of strategies, whereby an individual contemplates organizational long-run developments, considering its historical and extant qualities, and the external veracities of its operations.

Alqershi et al. (2021), defined ST as the "organization's ability to create and develop a strategic vision by exploring all potential future organizational events and challenging traditional thinking to promote sound decision-making in record time". Nuntamanop et al. (2013), described ST as managerial required competency comprising conceptual thinking, visionary thinking, creativity, analytical thinking, learning, synthesizing, and objectivity. Garratt (2003), cited ST as an organizational procedure established by executives in meeting daily contests of managing and providing cogent alternatives into a dynamic business environment in actualizing managerial efficiency.

ST is an inevitable capacity procedure to support managers in evolving better strategies and inspiring employees to collaborate in innovative tactics which aid a firm's survival (Olaleye et al., 2020). Also, ST is a process that encourages creative and innovative thinking to overcome the dynamic and often unpredictable difficulties encountered in today's economy (Haycock, Cheadle & Bluestone, 2012; Kula and Naktiyok, 2021). ST helps businesses to understand the present and be prepared for the future through scenario planning. Thus, it harmonizes various premises related to the future, which might be challenging.

ST can offer innovative solutions to complex problems in a turbulent and hypercompetitive environment, which has the potential to change the rules of the competition and depict the future (Zahra and Nambisan, 2012). ST can be described as a dynamic and innovation-oriented process, which aids in developing a clearer vision for managers, while responding to external changes. Therefore, decisions led by ST are expected to be creative, original, and change the rules in the competitive game (Heracleous, 1998; Tovstiga, 2013). As such, ST often requires reconciling competing premises about the future and the integration of differing views into a coherent unit. This integration requires creativity and intelligence. Nowadays, ST should not be assigned solely to top-level managers, since some inventions are traceable to middle and lower-level managers, as well as employees who relate with customers, suppliers, and other stakeholders. Since ST is viewed as a synthesizing activity that can be integrated into the formal organizational strategic planning process, it is developed in individuals across all levels of an organization.

Emereole and Okafor (2019) conducted a study on the impact of ST using strategic planning as a proxy on organizational effectiveness, as well as examining the effect of strategic leadership on organizational performance. This study centered on the telecommunication industry, where 64 employees were questioned. The chi-square result showed a tie between strategic planning and organization effectiveness at 0.05 significant level. However, it was concluded that strategic leadership has a significant and positive effect on organizational performance, indiciating that organizations needed to define their visions when engaging in the ST process.

Olaleye et al. (2020), explored the mediating role of absorptive capabilities on the relationship between ST and innovation performance of IT firms in Nigeria. 182 senior-level and mid-level managers were questioned, and pragmatic evidence revealed that top-level managers in the IT industry in Nigeria are familiar with and implement ST. This enables them to understand the dynamic nature of firms in this ever-changing business era. However, it was concluded that improved innovative performance is attributable to ST competency among IT firms but the mediating role of absorptive capabilities was insignificant. Ibrahim & Elumah (2016), examined the effect of ST on firm performance within Nigeria's business milieu. Data was analyzed and it was found that a positive relationship exists between ST and firm performance, whereby managers were expected to be thinking strategically in order to obtain a large market share or competitive advantage in the market.

Therefore, the study presents the following hypothesis:

$H0_1$: Strategic thinking is assumed to have a positive influence on innovation capability

2.2 Competitive Intelligence and Innovation Capability

In designing a strategy of recognizing emerging trends and sustaining competitive advantage over rivals, the development of CI is a key management tool for corporate chief executives and policymakers. It is necessitated in the system, which tends to provide companies with new ideas in predicting the future, and also accepting changes more readily. Thus, due to increased competition, competitor intelligence has become a valuable analytical tool in the strategic planning process.

CI is defined as actionable recommendations arising from a systematic process, involving planning, gathering, analyzing, and disseminating information on the external environment for opportunities, or developments that have the potential to affect a company's or country's competitive situation (Calof and Skinner, 1999). CI focused primarily on how to understand the surrounding competitive environmental impacts on organizations, by gathering information to make relevant and better decisions (Maune, 2020). Hence, CI enables managers in companies of all sizes to make decisions on marketing, research, investments, and long-term business strategies.

CI assists businesses in numerous ways, ranging from the creation of new concepts, products, opportunities, and markets, as well as the positioning and launching of new products, processes, or services. It also includes the generation of new ideas, the tracking of trends, mergers, and acquisitions and the formulation of strategies. Meanwhile, this conforms to a study conducted in Iran on the effect of CI on innovativeness, which revealed that CI usage leads to innovation and organizational survival (Hussein, Farzaneh, & Amiri, 2011). This finding is also corroborated by a study on small establishments in Canada, showing a clear relationship between CI usage and innovative performance (Tanev & Bailetti, 2008).

Caloof and Sewdass (2020) explained that among studies conducted on CI and innovation, theoretical studies surpass empirical studies. They explored literature using a review approach that established significant relationships between various CI processes and structure variables, mostly related to innovation. From this, researchers were guided to conduct future work on causal statistical approaches to this relationship.

Rastgar et al. (2017) used questionnaires for the first time in measuring organizational innovation in Iran based on a survey made by the Organization for Economic Co-operation and Development (OECD). Results depicted those features of CI on organizational innovation. ST has also been effective as a mediator in 66 percent of their relationships.

It is well established within management practice and among relevant scholarly communities that CI is a skillset crucial to the success of organizations and individuals (Olaleye et al., 2021; Michaeli and Simon, 2008; Global Intelligence Alliance, 2007a; Wright et al., 2002). Furthermore, Irenaus, Ikechukwu, and Ndubuisi (2021) researched CI and organizational performance among SMEs in the southeast of Nigeria. The degree of the relationship between technology intelligence, strategic partnership, market intelligence, and financial performance indicators such as return on investment, return on sales, and market share was examined with a sample size of 318. All the hypotheses they tested had a positive significance on financial performance, and a recommendation was put forward that all employees should have rudimentary values and an understanding of CI.

Tanev and Bailetti (2008), focused on the nexus between intelligence activities and innovation in technology firms and concluded that CI results in the creation of innovativeness in small businesses. Both small and large organizations in the western hemisphere and East Asia deeply applied CI as a basis for competitive advantage and innovativeness (Adidam, Banerjee, & Shukla, 2012; Smith & Kossou, 2008; Wright, 2011). A review by Hussein, Farzaneh, & Amiri (2011) showed a positive relationship between CI and innovative performance. Consequently, on the assumption of understanding CI's role in promoting InC, the following hypothesis is proposed:

$H0_2$: Competitive intelligence positively influences innovation capability

2.3 Moderating Role of Managerial Support and Innovation Capability

Managerial support is viewed as a commitment from organization administrators, considering some pressing and uncontrollable circumstances of their employees that require attention towards their development in achieving better performance. It can also be

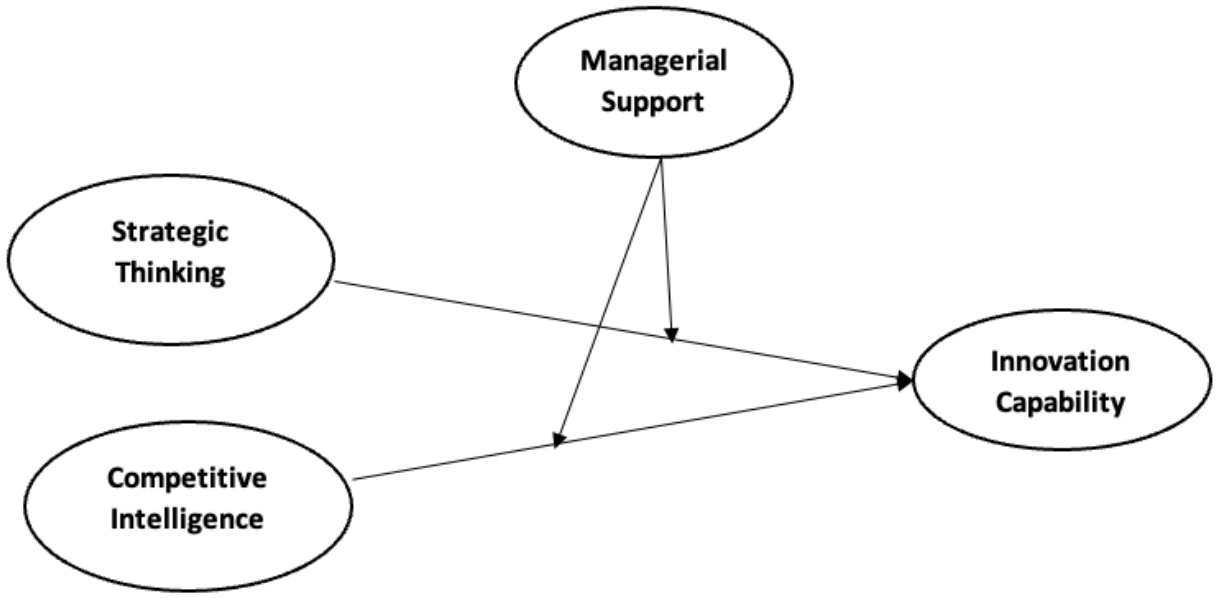

Figure 1 Research model.

defined as "the degree to which employees form general impressions that their managers appreciate their contributions, are supportive, and care about their subordinates' well-being" (Eisenberger, Stinglhamber, Vandenberghe, Sucharski and Rhoades 2002).

Nowadays, business administrators categorially put in place CI activities, whether performed formally or not. CI could be viewed as either a process or a product, which is acquainted with creating innovation of any manner. Meanwhile, firms with well-developed innovation capabilities stand a better chance to sustain their competitiveness. Additionally, managers who have ST skills need the information to interpret the dynamics of the competition correctly, to predict their competitive positions, and to determine their competitive positions correctly. These innovative ideas make them distinct.

Innovation in IT inventions has immensely contributed to the enhancement of organizational performance and the feat of competitive advantage for organizations within developed and developing countries (Niebel, 2018). Besides the dissimilar needs of studies, factors elucidating the creation and development of innovation capacities could be common, but their relative importance is inconclusive.

CI is less frequently applied due to its newness. It is strategically focused, requiring an expertise role in reducing its prevalent usage by top-level managers. CI is considered an imperative based on its positive impact on the economic environment, to retain its continuous flow of innovations and technological advances in exercising pressure on all competitors (Fagerberg & Srholec, 2008).

In a study conducted by Kula and Naktiyok (2021), the impact of ST skills on CI by executives was examined. The idea of ST epitomizes a knowledge of ST dimensions: system thinking, creativity, and vision dimensions. In contrast, CI was evaluated based on its context and process. Data were obtained from 628 executives from the automotive and communication industries. Based on the results, ST has a positive and significant effect on CI. Hence, the study greatly contributes to the literature on the connection between ideas of strategy and competition through the interaction of ST and CI.

However, studies in the literature do not address if managerial support plays a moderating role in the relationship between ST, CI, and InC. Therefore, the following hypotheses are proposed:

H3a: the relationship between strategic thinking and innovation capability is positively moderated through management support

H3b: the relationship between competitive intelligence and innovation capability is positively moderated through management support

A research model for all testable hypotheses stated above is depicted in Figure 1.

3. METHODOLOGY

3.1 Study Area, Research Design, Population, and Sample Size

This study centered on Nigerian IT firms, since the sector has promising contributions to the nations' GDP, as declared by the Federal Government of Nigeria (Pantanmi, 2021). IT companies were assembled using the directory of recognized sectoral and national bodies including: the Nigeria Computer Society (NCS), the Information Technology Association of Nigeria (ITAN), and the National IT Development Agency (NITDA). The study involved a quantitative cross-sectional research design. All-inclusive information and understanding regarding the prevailing subject of discourse was elicited from CEOs and Senior Managers occupying top and mid-level managerial positions in the IT firms, using a well-structured instrument adapted from the extant literature. A combined non-probability sampling technique using purposive and convenience was used since the criteria for selecting sample units and participants was already known. The study proposed a sample size of 260 for a population of 800, using the program G*Power, version 3.1.9.2, with an error probability of 0.05 (Faul et al., 2009).

3.2 Measures

InC encompasses a firms' skills, knowledge, and procedures to transform identified knowledge into technology and business (Zawislak et al., 2012). A five items scale was adopted from Robledo et al. (2010) and Lugones et al., (2007). ST was captured using a ten items scale derived from three dimensions: system thinking, divergent thought, and reflection (Liedtka, 1998 and Napier and Albert, 1990). Meanwhile, CI and management support were modeled and captured with seven and five items, respectively (Stefanikova et al., 2015; Dishman and Calof, 2008; Allen and Meyer, 1990). Responses to all items were measured on a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree".

3.3 Data Analysis

The analytical procedure deployed in this study comprises both descriptive and inferential statistics. SPSS was used in describing the sample population frame in terms of frequencies and percentages. The proposed structural model was subjected to strings of psychometric and multi-collinearity tests, with confirmation by the Partial Least Square Structural Equation Modeling (PLS-SEM) using SmartPLS version 3.0. Significance levels and their path coefficients were examined using the bootstrapping method.

4. RESULTS

4.1 Response Rate and Descriptive Analysis

Out of 800 surveys administered within 16 months, 401 were returned, 74 responses were deleted, while 327 were valid for the study, implying a 40.8 percent response rate. Descriptive statistics described the socio-economic characteristics of the respondents, and also defined whether or not the selected respondents are appropriate for the study.

Table 1 Demographic profile of the respondents. Source: Computations from Survey Data, 2020.

Demographics	Parameters	Sample (n=327)	
		Frequency	Percentage
Gender	Male	214	65.4
	Female	113	34.6
Educational Qualification	Bachelor	106	32.4
	Masters (MBA/MPA/MSC)	193	59.0
	Doctorate	28	8.6
Working Experience	Below 5 years	41	12.5
	5-10 years	129	39.5
	Above 10 years	157	48.0
Job Position	Chief Executive Officer (CEO)	211	64.5
	Director	67	20.5
	Supervisor	49	15.0

Table 2 Measurement model. Note: *** = p < 0.01. –* discarded items during confirmatory factor analysis.

Constructs and Indicators		*Loadings (λ)*	Mean	Std. Deviation	Skewness	Kurtosis
Competitive Intelligence	CI1	0.825***	3.548	0.836	-0.411	-0.478
	CI2	0.820***	3.469	0.816	-0.275	-0.387
	CI3	0.815***	3.557	0.880	-0.590	0.274
	CI4	0.828***	3.648	0.806	-0.388	-0.094
	CI5	0.807***	3.622	0.825	-0.362	-0.368
	CI6	-				
	CI7	-				
Strategic Thinking		*System Thinking*				
	ST1	0.819***	3.598	1.075	-0.655	-0.407
	ST2	0.824***	3.660	1.219	-0.507	-0.899
	ST3	0.857***	3.557	1.286	-0.476	-0.973
	ST4	0.868***	3.648	1.164	-0.642	-0.502
		Divergent Thought				
	DT1	0.876***	3.469	1.183	-0.311	-0.919
	DT2	0.876***	3.768	1.084	-0.667	-0.238
	DT3	0.821***	3.712	0.993	-0.644	0.167
		Reflection				
	RX1	0.841***	3.331	0.866	-0.070	-0.435
	RX2	0.867***	3.455	1.031	-0.401	-0.655
	RX3	0.840***	3.481	1.035	-0.587	-0.266
Managerial Support						
	MS1	0.889***	4.012	1.149	-0.932	-0.251
	MS2	0.888***	3.669	1.178	-0.522	-0.763
	MS3	0.818***	4.076	0.984	-0.970	0.202
	MS4	-				
	MS5	-				
Innovation Performance						
	InC1	0.784***	3.349	1.063	-0.130	-0.879
	InC2	0.841***	3.243	0.936	-0.072	-0.735
	InC3	0.806***	3.543	0.979	-0.695	-0.106
	InC4	0.809***	3.208	1.028	-0.247	-0.764
	InC5	-				

The study sample comprises 327 top-level and middle-level managers of IT firms in Nigeria. Out of this sample, male respondents accounted for 65.4% of total responses obtained, while 34.6% are female, this indicates that there is gender equality among IT firms' administration in Nigeria. Distribution based on academic qualification evidenced that majority (59%) possess a master's degree, closely followed by those with bachelor certificate (32.4%) and the least were those with their doctorate (8.6%). On average, the majority of the respondents are highly knowledgeable and experienced with 48% having served for more than 10 years, next was 5-10 years with 39.5%, and the least proportion (12.5%) had less than 5 years of experice. Finally, the job position indicates that 64.5% are the CEOs (sole owners), closely followed by 20.5% occupying the position of director and the lowest number (15%), employed as supervisors.

4.2 Measurement Model

The results of the measurement model are presented in Table 2, using the Partial Least Square Structural Equation Modeling (PLS-SEM) to the evaluation of the psychometric properties of the constructs: ST, CI, managerial support, and InC. In assessing the measurement model as hypothesized, all constructs associated with latent variables are subjected to a psychometric test. The test entails the outer loadings, Average Variance Extracted (AVE), Composite Reliability (CR), Cronbach's alpha (CA), rho_A values, and convergent validity of items related to their constructs (Hair et al. 2017).

To improve the best model fit indices, scale items with poor loadings below 0.4 were deleted. This included one item from InC, and two items each from CI and MS. Thereafter, all retained items documented outer loadings above 0.5, as suggested by Lin & Wang (2012), while values of CR, CA, and rho_A exceed the

0.7 threshold. This affirms the presence of convergent validity in the measurement model (Dijkstra & Henseler 2015). Since all the AVEs are above the threshold, the entire measurement shows an acceptable fit and high predictive power.

The discriminant validity among the variables is also recognized following the Fornell-Larcker criterion (1981), the square root of AVE (represented diagonally in bold format) for each latent variable is higher than the inter-construct correlation for each construct in the measurement model depicted in Table 3. Furthermore, critiques made on the reliability of Fornell-Larcker's (1981) criterion led to the alternative proposed technique, the Heterotrait-Monotrait (HTMT) ratio of correlations to demonstrate its superiority over the Fornell and Larcker (1981) approach (Henseler *et al.*, 2015). As observed in the table, the HTMT values shown in italics right above the square roots of AVE in diagonal that all the constructs in our measurement model are below the thresholds of 0.9, as recommended by Kline (2005). This affirms a definite discriminant validity existence among variables in our model.

4.3 Structural Model Assessment

In assessing the hypothesized relationship between constructs as depicted in the model in Figure 2, R-squared values, the beta (ß) coefficients, and t-values obtained from bootstrapping using 2,000 subsamples and effect sizes (f2) are being examined as recommended by Hair et al. (2019). Firstly, the direct effect of the predictor on the dependent variable is analyzed and the result showed that ST had a positive effect on InC (ß = 0.231; t = 2.771). It also proved the second hypothesis is significant, showing that CI positively influences InC (ß = 0.366; t = 7.085). To test the moderation effect contained in hypothesis three, the result of the moderation analysis shows that MS positively moderate the relationship between ST and InC (ß = 0.155, t=3.002, p< .001), likewise, the path between CI and InC (ß = 0.123; t = 2.442). However, all hypothesized paths in the study model are supported and the coefficient of determination (R-squared) shows the combined effects of exogenous latent variables were considered to be moderate with an R2 value of 0.310. Subsequently, to observe the beta coefficients (ß), statistical significance (P-value), and variance explained (R2), Sullivan & Feinn (2012), recommend that the substantive significance (f2), be reported to reveal the actual magnitude of the observed effects. The effect sizes of the direct and indirect paths are recorded in Table 4. Relying on the magnitude of effect sizes, three paths including the moderating path (STR→InC; MOD_MS*STR→InC; MOD_MS*CI→InC) recorded low effect sizes, since the f2 fell within the limit of 0.02 - 0.15 as suggested by Cohen (1988), while the effect size of CI on InC was moderate (f2= 0.173), hence none had insignificant magnitude.

Considering the overall goodness-of-fit (GoF), which can be accessed via tests of model fit or the use of fit indices, indicators like the SRMR and normal fit index (NFI) become significant, if the SRMR is less than 0.08 and NFI fell within the range of 0 and 1. Hence, the study model is said to be statistically fit (SRMR= 0.072; NFI = 0.907) as evidenced by Henseler, Hubona, and Ray (2016).

Table 3 Inter-construct correlations, Convergent and Discriminant Validity. Notes: [a]= Diagonal values in bold are the square root of AVE, [b]= Italicized values above the square root of AVE are HTMT ratios.

Constructs	**CA**	**Rho**	**CR**	**AVE**	**CI**	**InC**	**MS**	**STR**
Competitive Intelligence	0.877	0.879	0.911	0.671	[a]**0.819**	[b]*0.526*	*0.225*	*0.309*
Innovation Capability	0.826	0.830	0.884	0.657	0.454	**0.810**	*0.385*	*0.435*
Managerial support (MS)	0.832	0.835	0.900	0.749	0.191	0.325	**0.866**	*0.886*
Strategic Thinking (STR)	0.921	0.922	0.934	0.586	0.278	0.385	0.772	**0.765**

Table 4 Results of the Path Analysis. Note: ***p < 0.05 (based on two-tailed test).

Hypothesis	***Model Fit Indices:*** *SRMR= 0.072; NFI = 0.907 d_ULS = 3.928*					
Direct Effects	***Std. Beta***	***t-value***	***P-values***	***f ²***	***R²***	***Decision***
H1: STR→InC	0.231	2.771***	0.006	0.038	0.310	*Supported*
H2: CI→InC	0.366	7.085***	0.000	0.173	0.310	*Supported*
Interaction Effects (Moderation)						
H3a:MOD_MS*STR→InC	0.155	3.002***	0.003	0.029		*Supported*
H3b: MOD_MS*CI→InC	0.123	2.442***	0.015	0.023		*Supported*

Table 5 Latent Construct Prediction Summary. Note* RMSE = Root Mean Squared Error, and MAE = Mean Absolute Error.

	RMSE	MAE	Q^2_predict
Innovation Capability	0.522	0.403	0.108
Strategic Thinking	0.237	0.182	0.952

Finally, the predictions of the outcome variable in the study model were examined, using the PLS predict functionality in SmartPLS. The predictive validity involved cross-validation and generation of predicted errors and error summary statistics, which include the root mean squared error (RMSE), the mean absolute error (MAE), and the mean absolute percentage error (MAPE) (Shmueli et al., 2016). The PLS predict analysis yielded Q^2 values for each of the constructs: InC (0.952), STR (0.108). Hence, the positivity of the Q^2 value denoted that the model is adequately established, and valid in predicting the exogenous latent construct.

5. DISCUSSION AND THEORETICAL CONTRIBUTIONS

Today, managerial precedence focuses on idea creation, which is a result of an innovation-driven economy, especially within the business world. This study provides empirical evidence for the proposed theoretical relationships in the framework, confirming the significant relationships, both direct and indirect. The evidence highlights the role that MGS plays as a moderating variable on the relationships between the STR, CI, and IT firms' InC.

First, the question of the relationship between ST and InC is addressed with the three dimensions of ST: system thinking, divergent thought, and reflection. The findings show a significant relationship between STR and InC, supporting Kalu and Naktiyok (2021) and Zahra and Nambisan, (2012). Consequently, it can be deduced that managers engaged in IT organizations possess ST skills since the industry involves originations which tend to satisfy demands in the changing environment.

ST competency has been shown to also contribute to the positive outcomes on InC. A firm's innovation performance solely depends on hypothetical intellects and strategic plans made by visionary and strategic leaders in predicting the future, and implementing

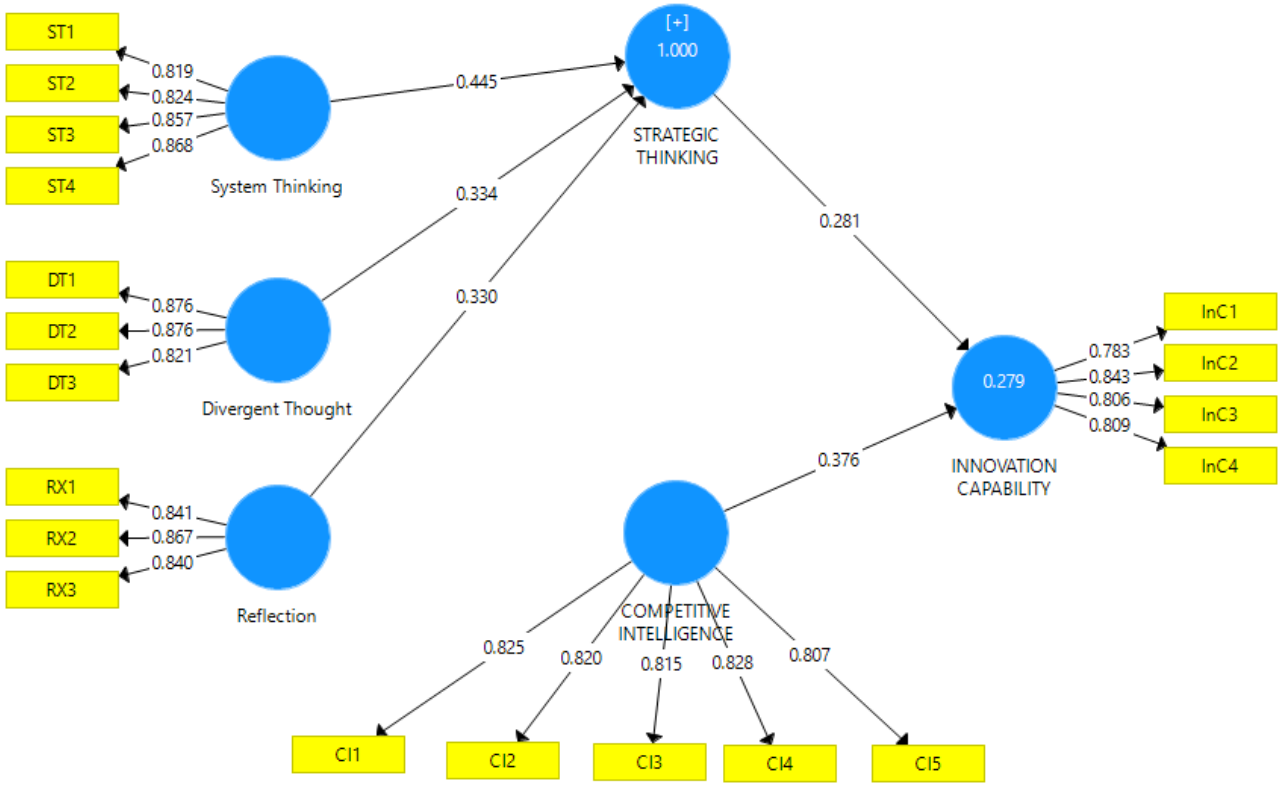

Figure 2 Structural model (direct path).

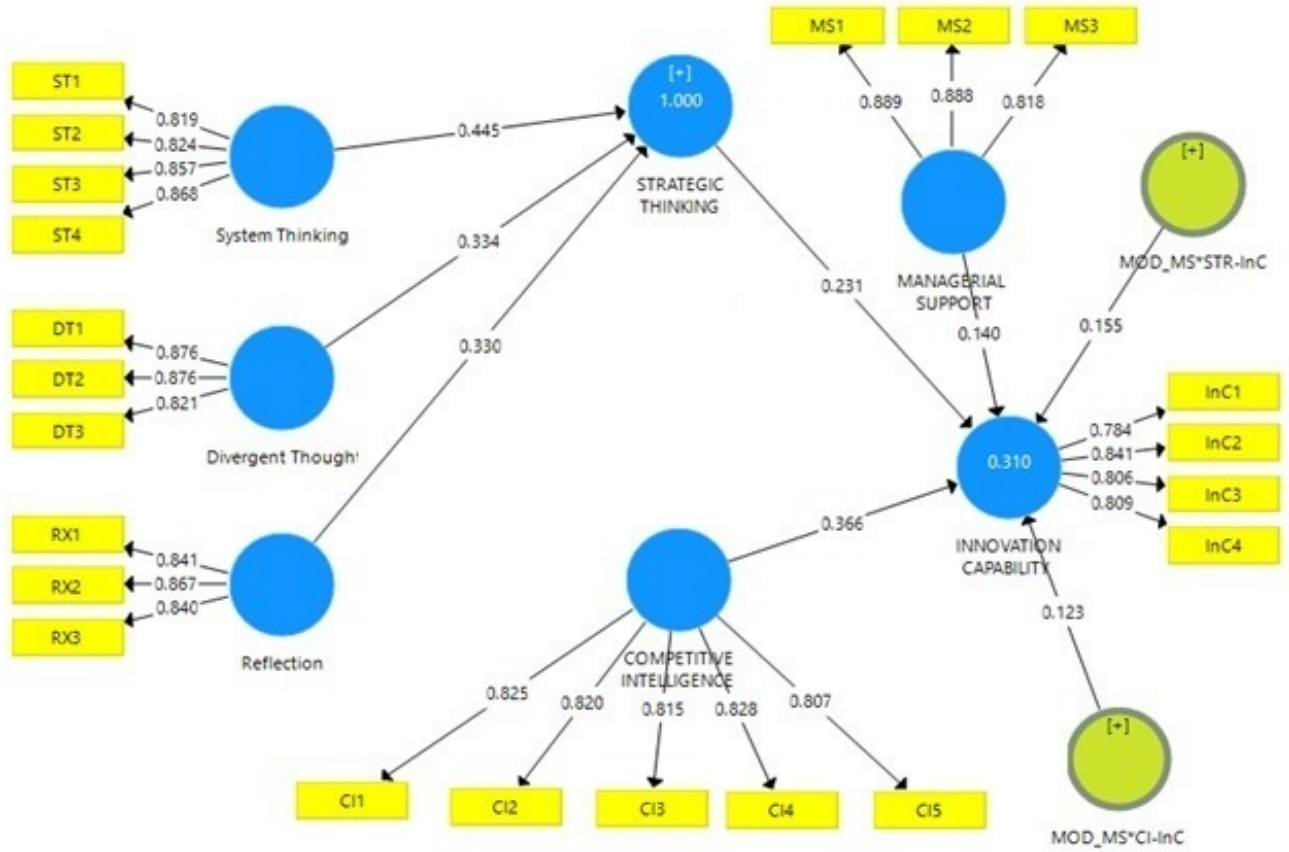

Figure 3 Final PLS structural model (with moderator).

planned scenarios in gaining a competitive advantage over rivals. Strategic thinkers have diverse obligations, ranging from creating strategic plans, monitoring market trends, and continuously outwitting competitors in market performance, using tools such as PESTLE analysis, Porter's Five Forces, McKinsey 7S model, and SWOT analysis.

Secondly, the result revealed that CI is directly related to, and had a positive impact on, InC. This result validates Caloof and Sewdass (2020) and Ainul et al. (2015), who established a strong effect between CI and innovation. In support of the findings, Hussein et al. (2011) and Tanev and Bailetti (2008) reported that CI results in innovativeness, thereby enhancing innovative performance among SMEs. Also, strong support was given to the reasoning by Petrişor and Străin (2013), Jaworski, Macinnis, and Kohli (2002), and Krücken-Pereira, Debiasi, and Abreu (2001) that CI serves as a strategy to develop and innovation capacity. Meanwhile, Poblano-Ojinaga, (2021) mentioned that no direct effect exists between CI on InC, emphasizing the repute of integrating an intervening variables, such as knowledge management, to obtain better results in serving as a source of competitive advantage for operating firms

The significance of CI's influence on InC conforms to the definition of Wright, Fleisher, and Madden (2008) in Muritala and Ajetunobi (2019), viewing CI as a process in which an organization amasses information about competitors and the competitive environs, to be used in forecasting decision makings with the intent of improving performance. Hence, this is actualized with actionable intelligence made through critical thinking, reflection, and principled evidence gathered from the competitive environment. This in turn is processed and further analyzed to aid decision making. Hence, CI is empirically proven to increase innovative performance in Nigerian IT firms.

From the result presented, Figure 3 shows an R-squared value of 0.279, while the inclusion of the moderator (MGS) caused a change in the R-squared value to 0.310 (see Figure 4). Hence, this implies that an upward shift in the value of R-squared is accounted for by the combined effects of exogenous latent variables, in which the intervening variable, MGS, is strongly embedded through its positive co-efficient.

Several studies explore the CI effect on innovation performance, as well the effect of ST on innovation performance. A study on the dual

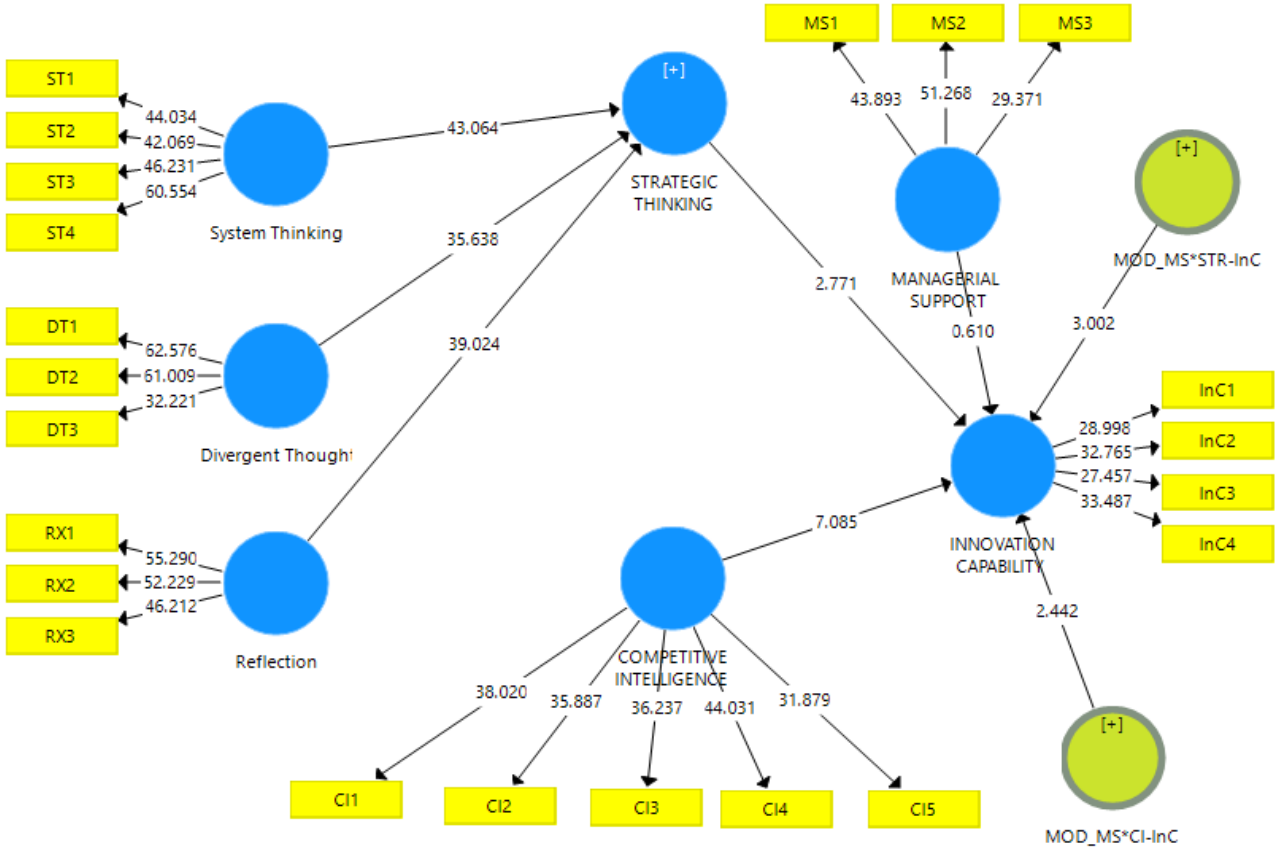

Figure 4 T-test statistic.

effect of CI and ST on innovation was carried out by Rastgar, Arefi & Hizji, (2017). The novelty of this study owes to factors including the industry type, continent (country), and intervening variable, which is the "managerial support" playing a moderating role. Such moderating effect is one of the unique contributions of this study, as it supports the proposal that SMGS has a role in the relationship between ST and IT firms' InC, confirming that management support to the firm enhances innovation. The study found CI to influence innovation capacity through the moderating role of MGS, this creates an irreplaceable input to IT firms, as evidence showed that managers who exhibit ST skills have a keen interest in depicting future situations and, as such, they tend to steer competition. Since business is driven by profit, to sustain competition, interests are not only protected but rather expanded in the area of outsmarting competitors with innovation capacity (Botha and Boon, 2008).

This study gives support to the proposal made by Rastgar et al. (2017) on the need to develop competition in business-driven companies, in awareness of environmental changes and innovation. Hence, CI is a basis of the innovation process, but a lack of ST in organizations causes inefficiency and ineffectiveness in achieving organizational innovation. Following debates on the significant and positive influence of ST on the capability of organizational innovation, management greatly supports this. This is done by encouraging all managers in charge of decision-making, as well as employees with satisfactory resources and strategies on developing, and implementing competencies on foresight and intelligence in the marketing conduct of the organizational not minding cadres of personnel.

6. CONCLUSION

The study establishes positive relationships between the ST competency and its sub-constructs of systemic thinking, divergent thought, and reflection, as well as one of business capability with CI to stimulate InC with support from top management teams of IT firms in Nigeria.

Notably, in the literature, academia has dealt with the relationship between ST and innovation performance, as well as CI influence on innovation performance. There has been less focus on the nexus between these constructs, via a best of fit research model,

including the feat of management support on this strategy for developing organizational capacity. Thus, this remains an novel contribution to scholarly discourse.

Overall results of the present study proved that the management team's support for ST and careful intensification on CI serves as an imperative strategy to achieve increased organizational InC. The conclusion is drawn that through support from the management team, and influence on the link between ST and CI, Nigerian IT firms, and their dynamic economy will be innovation-driven.

6.1 Policy Implications for Management

A few practical implications are deduced from this study, which remains valuable to managers and the top management team in place of rationale decision on the aptness of innovation type and capacity, to enhance performance. CI is relevant in today's global environment since it entails the creation of a thoughtful idea, which level managers strategically make future predictions upon. In this study, it is implicitly stated that managers who have ST skills can use their CI skills more effectively, as this tends to increase the innovation capacity and performance of the organization.

The present study provides consistent results with the ST and CI literature on innovation capacity. This owes to the fact that managers can create a supportive competitive culture at a certain level by giving importance to ST, by ensuring their contributions to the long-term goals of the enterprise and to the extent of convincing workforces in actualizing the need for innovativeness and viewing it as a corporate objective to be realized. Finally, results depict that innovation benefits from intelligence processes and the proactiveness of management in support for this tactic. This can be done through periodic strategic training and orientation of employees and better diffusion of innovation capacity as a core capability. Connecting with systemic thinking and divergent thought will keep the creative vision of operations alive, and result in better performance.

6.2 Limitations and future research

Despite the theoretical and empirical contributions presented by this study, some confines should be acknowledged. First, the study results may not be generalized with other industries and should be interpreted in the context of the industry and changing business dynamics. Future research using multiple industries will provide a fruitful comparison of the relationship between ST, CI, and InC. It will also help in understanding the relationship between ST and types of intelligence such as market intelligence, technological intelligence, corporate and strategic intelligence. The study is cross-sectional, which made use of a survey in obtaining information from the respondents. Therefore, future research could also supplement the data collection method sections of the interview, making a mixed-method study, which could compensate for the strengths and weaknesses associated with particular methods. Future research must assess whether the alignment between ST and CI changes over time given a specific innovation capacity of the firm through, for example, a longitudinal study. Research could also be expanded to identify any leadership style that strengthens this association since ST is further allied with leadership obligation. Finally, since no strategy is required in an environment where there is no rival, the identified variables could be investigated as an antecedent of sustainable competitive advantage.

7. REFERENCES

Adelekan, S. A. (2020). Effect of Strategic Leadership and Strategic Thinking on Firms' Competitive Advantage: Evidence from Fast Moving Consumer Goods Sub-Sector. *European Journal of Applied Business Management*, 6(3), 27-41.

Adidam, P. T., Banerjee, M. and Shukla, P. (2012). Competitive intelligence and firm's performance in emerging markets: An exploratory study in India. *Journal of Business & Industrial Marketing*, 27(3), 242-254. doi: 10.1108/08858621211207252

Ainul M. A., Hasliza A., and H. A., Noor (2015). Competitive Intelligence Among SMEs: Assessing the Role of Entrepreneurial Attitude Orientation on Innovation Performance. 2nd International Symposium on Partial Least Squares Path Modeling, Seville (Spain), pp.1-12.

Allen, N.J. and Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to

the organization. *Journal of Occupational Psychology,* 63(1), 1-18.

Alomari, Z. (2020). Does human capital moderate the relationship between strategic thinking and strategic human resource management?. *Management Science Letters*, 10(3), 565-574.

Alqershi, N. A., W. F. W. Yusoff, M. A. N. B. Masrom, Hamid, N. B. A, Mokhtar, S. S. M., AlDoghan (2021). Intellectual capital and performance of automotive manufacturers: the role of strategic thinking. *International Journal of Productivity and Performance Management*. Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJPPM-02-2021-0067

Bani-Hani, J. (2021). The moderating influence of manager's strategic thinking on the effect of talent management on organization core competency. *Management Science Letters*, 11(1), 213-222.

Bates, R., and Khasawneh, S. (2005). Organizational learning culture, learning transfer climate, and perceived innovation in Jordanian organizations. *International Journal of Training and Development*, 9: 96-109.

Bonn, I. (2001). Developing strategic thinking as a core competency. *Management Decision*, 39(1), 63-71.

Bouhali R., Y.Mekdadb, H.Lebsirc and L. Ferkhad (2015).Leader Roles for Innovation: Strategic Thinking and Planning. *Procedia - Social and Behavioral Sciences*, 181: 72 – 78.

Cainelli, A., Janissek-Muniz, R. and Reichert, F. (2019). Foresight como alavanca para Inovação: contribuições para uma agenda de pesquisa. In: Anais XLIII ANPAD - SP.

Calof, J. L. and Skinner, B. (1999). Government's role in competitive intelligence: What' happening in Canada? *Competitive Intelligence Magazine*, 2(2), 20-23.

Calof, J., and Sewdass, N. (2020). On the relationship between competitive intelligence and innovation. *Journal of Intelligence Studies in Business*, *10*(2).

Daft, Richard. L. (1978). A dual-core model of organizational innovation. *Academy of Management Journal*, 21(2), 193-210. doi: 10.2307/255754

Damanpour, Fariborz and Evan, W. M. (1984). Organizational innovation and performance: The problem of organizational lag. *Administrative Science Quarterly*, 29(3), 392-409.

Dijkstra, T. K. and J., Henseler (2015). Consistent Partial Least Squares Path Modeling. *MIS Quarterly*, 39(2), 297-316.

Dishman, P. L., and Calof, J. L. (2008). Competitive intelligence: a multiphasic precedent to marketing strategy. *European Journal of Marketing,* 42(7/8), 766-785.

Dixit, S., Singh, S., Dhir, S. and Dhir, S. (2021). Antecedents of strategic thinking and its impact on competitive advantage. *Journal of Indian Business Research,* 13(4), 437-458. https://doi.org/10.1108/JIBR-08-2020-0262

Eisenberger, R., Stinglhamber, F., Vandenberghe, C., Sucharski, I.L., and Rhoades, L. (2002). Perceived Supervisor Support: Contributions to Perceived Organizational Support and Employee Retention. *Journal of Applied Psychology*, 87, 565– 573.

Emereole, I. D., Okafor, C. S. and Emerole G. A. (2019). Effect Of Strategic Thinking on Organizational Performance; A Study of Mtn Nigeria In Abia State. *JOSAS*, 3(3), 59-73.

Fahmi, A.M., Khudair, A.H. and Ali Mohammed, A.A. (2020). The mediating effect of strategic thinking between strategic leadership and tourism marketing. *African Journal of Hospitality, Tourism and Leisure*, 9(1), 1-14.

Faul, F., Erdfelder, E., Buchner, A. and Lang, A.G. (2009). Statistical power analysis using G*power 3.1: tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149-1160.

Fornell, C. and D. F., Larcker (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*, 18(3), 382-388.

Galvin, R. H. (1997). Competitive intelligence at Motorola. *Competitive intelligence review*, *8*(1), 3-6.

Garratt, E. D. (2003), Developing strategic thought: Reinventing the art of direction-giving (pp.157-186). London: McGraw-Hill.

Global Intelligence Alliance (2007a), Market intelligence for the strategy and planning process", GIA White Paper 1/2007, Global Intelligence Alliance.

Hair J. F., G. T. M. Hult, C. M., Ringle and M., Sarstedt (2017). A Primer on Partial Least

Squares Structural Equation Modeling (PLS-SEM), 2nd ed., Sage, Thousand Oaks, CA.

Haycock, K.,Cheadle, A., Bluestone, K.S. (2012). Strategic thinking and leadership. *Library leadership & Management*, 26(3/4), 1-23.

Henseler, J., Hubona, G. and Ray, P.A. (2016). Using PLS path modeling in new technology research: updated guidelines. *Industrial Management and Data Systems*, 116(1), 2-20.

Henseler, J., Ringle, C. M., and Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135

Heracleous, L. (1998). Strategic thinking or strategic planning? *Long Range Planning*, 31(3), 481-487.

Hunitie, M. (2018). Impact of strategic leadership on strategic competitive advantage through strategic thinking and strategic planning: a bi-meditational research. *Verslas: teorija ir praktika*, 19(1), 322-330.

Hussein, R. D., Farzaneh, G. and Amiri, F. (2011). Analyzing the impact of competitive intelligence on innovation at scientific research centers In Isfahan science and technology town. *Interdisciplinary Journal of Contemporary Research in Business,* 3(5), 940-948.

Ibrahim O. M. and Elumah Lucas O. (2016). Strategic Thinking and Organization Performance: Study of Nigeria Firms. *Journal of Business Administration Research*, 5(1), 23-28.

Irenaus, O. N., E. O. Ikechukwu and P. O. Ndubuisi (2021). Competitive Intelligence and Organizational Performance in Small and Medium Enterprises in South East Nigeria. *International Journal of Research in Management*, 11 (1), 43-64.

Jaworski, Bernard J., Macinnis, Deborah J., and *Kohli, Ajay K. (2002). Generating competitive intelligence in organizations. Journal of Market-Focused Management,* 5(4), 279-307.

Kettunen, P., Heino, H., Rasinkangas, J. and Jauhiainen, J.S. (2020), "Addressing local sustainability: strategic thinking in the making. *Scandinavian Journal of Public Administration*, 24(2), 21-41.

Krücken-Pereira, L., Debiasi, F., & Abreu, A. F. (2001). Technological innovation and competitive intelligence: An interactive process. READ - Electronic Journal of Directors, 7.

Kula, M. E. and Naktiyok, A. (2021) Strategic thinking and competitive intelligence: Comparative research in the automotive and communication industries. *Journal of Intelligence Studies in Business*, 11 (2) 53-68.

Liedtka, J.M. (1998). Strategic thinking: can it be taught? *Long Range Planning*, 31(1), 120-129.

Lugones, G., Gutti, P., and Le Clech, N. (2007). Indicadores de capacidades tecnológicas en América Latina. CEPAL

Maune, A. (2020) Intention to use mobile applications in competitive intelligence: An extended conceptual framework. *Journal of Intelligence Studies in Business*, 11 (2) 6-29.

Michaeli, R. and Simon, L. (2008), "An illustration of Bayes' theorem and its use as a decision-making aid for competitive intelligence and marketing analysts", European Journal of Marketing, 42(7/8), 804-13.

Napier, N.K. and Albert, M.S. (1990). East Asian and American perspectives on thinking strategically: the leopard and his spots. *Asia Pacific Journal of Human Resources*, 28(4), 40-50.

Nemutanzhela, P., and Iyamu, T. (2011). A framework for enhancing the information systems innovation: using competitive intelligence. *Electronic Journal of Information Systems Evaluation,* 14(2), 242-253.

Nickols, F. (2016). Strategy, strategic management, strategic planning and strategic thinking. *Management Journal*, 1(1), 4-7.

Nuntamanop, P., Kauranen, I. and Igel, B. (2013). A new model of strategic thinking competency. *Journal of Strategy and Management*, 6(3), 242-264.

Olaleye B. R., Emeagwali, L. O., Olasehinde A., S., Oladele O., T., Adelakun G. C., Ebhoaye O. S. & Solanke T., F. (2021). Protocol for a Scoping Review on the Conceptualization of Competitive Intelligence in Entrepreneurship Literature. *Annals of Spiru Haret University. Economic Series*, 20(3), 209-223. doi: https://doi.org/10.26458/21310

Olaleye, B. R., M. Akkaya, O. L. Emeagwali, R. I. Awwadd & S. Hamdane (2020). Strategic Thinking and Innovation Performance; The Mediating Role of Absorptive Capabilities.

Revista Argentina de Clínica Psicológica, 29(5), 2030- 2043.

Olaleye, B. R., O. M. Fetuga, F. T. Solanke, O. O. Ojo and O. N. Anifowose (2021). Influence of servant leadership and Organisational Structure on Employee Innovative Behaviour in Nigerian Tertiary Institutions. *KIU Journal of Humanities,* 6(1), 305-308

Pantami, I. (2021, November, 22). ICT contribution of 14.07% to Nigeria's GDP unprecedented. *Premium times,* https://www.premiumtimesng.com/news/more-news/395379-ict-contribution-of-14-07-to-nigerias-gdp-unprecedented-pantami.html

Petrişor, I., and Străin, N. A. (2013). Approaches on the competitive intelligence. USV Annals of Economics & Public Administration, 13(1), 100-109.

Poblano-Ojinaga, E. R. (2021) Competitive intelligence as a_factor of the innovation capability in Mexican companies: A structural equations_modeling approach. Journal of Intelligence Studies in Business. 11 (2) 69-79.

Ponta, L., Puliga, G., Oneto, L. and Manzini, R. (2020). Identifying the Determinants of Innovation Capability with Machine Learning and Patents. IEEE Transactions on Engineering Management.

Prajogo, D. I., and Ahmed, P. K. (2006). Relationship between innovation stimulus, innovation capacity, and innovation performance. *R&D Management*, 36(5), 499-515. doi: http://dx.doi.org/10.1111/j.1467-9310.2006.00450.x

Rastgar, A., Arefi, A., & Hizji, M. (2017). Achieving organizational innovation by competitive intelligence and strategic thinking. *Journal of Strategic Management Studies*, *7*(28), 21-38.

Robledo, J., López, C., Zapata, W., and Pérez, J. D. (2010). Desarrollo de una Metodología de Evaluación de Capacidades de Innovación. Perfil de coyuntura económica, (15), 133-148.

Shmueli, G., Ray, S., Velasquez Estrada, J.M. and Shatla, S. B. (2016). The Elephant in the Room: Evaluating the Predictive Performance of Pls Models. *Journal of Business Research*, 69(10), 4552-4564.

Smith, J. and L., Kossou (2008). The Emergence and Uniqueness of Competitive Intelligence in France. *Journal of Competitive Intelligence and Management,* 4(3), 1-12

Society of Competitive Intelligence Professionals (SCIP). 2009. What is CI? Available at: http://www.scip.org/content.cfm?itemnumber =2214&navItemNumber =492.

Srivastava, S. and D'Souza, D. (2019). An empirical examination of the relationship between managerial strategic thinking and absorptive capacity of the organization. *Journal of Strategy and Management*, 13(1), 51-71.

Stefanikova, L., Rypakova, M., and Moravcikova, K. (2015). The impact of competitive intelligence on sustainable growth of the enterprises, 26(15), 209–214.

Tanev, Stoyan, and Bailetti, Tony. (2008). Competitive intelligence information and innovation in small Canadian firms. European Journal of Marketing, 42(7-8), 786-803. doi: 10.1108/03090560810877150

Tooranloo, H. S., and Saghafi, S. (2019). Investigating the impact of using knowledge management on organisational agility through competitive intelligence and strategic thinking. *Journal of Information & Knowledge Management*, *18*(02), 1950016.

Vriens, D., & Søilen, K. S. (2014). Disruptive Intelligence-How to gather Information to deal with disruptive innovations. *Journal of Intelligence Studies in Business*, *4*(3), 63-78.

Wright, S., Fleisher, C.S. and Madden, E. (2008). Characteristics of Competitive Intelligence Practice in R&D Driven Firms: Evidence from the UK Pharmaceutical Industry. *European Business Research Forum (EBRF),* Finland

Wright, S, Pickton, D.W. and Callow, J. (2002). Competitive Intelligence in UK firms: A Typology. *Marketing Intelligence & Planning*, 20(6), 349-360

Zahra, A.A. and Nambisan, S. (2012). Entrepreneurship and strategic thinking in business ecosystems. *Business Horizons*, 55(3), 219-229.

Zawislak, P.A., Alves, A.; Tello-Gamarra, J., Barbieux, D., and Reichert, F. (2012). Innovation capability: from technology development to transaction capability. *Journal Technology Management of Innovation,* 7(2), 14-27.s