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Strategic Thinking and The Implementation of Business Intelligence System of COCA COLA PLC, Abuja, Nigeria

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Abstract- ***The study examined the extent to which strategic thinking shaped the implementation of a business intelligence system at Coca-Cola Nigeria Plc, Abuja. A quantitative design was employed, using structured questionnaires administered to a sample of 139 respondents drawn from a population of 214, determined through the Yamane formula. Descriptive statistics and structural equation modelling (SEM) were applied for data analysis. Results indicated that strategic thinking significantly influenced the implementation of business intelligence, with notable positive effects on strategic, competitive, and technological intelligence. The study concluded that strategic thinking plays a pivotal role in enhancing business intelligence adoption. It was recommended that management strengthen strategic thinking practices to establish a robust BI framework aligned with organizational objectives, thereby improving long-term planning and competitive advantage.***

Keyword: Strategic Thinking, Business Intelligence System

I. INTRODUCTION

Strategic thinking has been regarded as a vital element for organizations striving to manage complex business environments and secure lasting success. Through this approach, intricate scenarios are evaluated, future outcomes are anticipated, and decisions are shaped in alignment with long-term objectives (Geier, 2024). In contrast to short-term planning, emphasis is placed on foreseeing consequences and utilizing opportunities to maintain a competitive edge (Pirela, et al., 2024). When risks and opportunities are thoroughly examined, innovative strategies are formulated to support sustainability and growth ambitions. At its foundation, strategic thinking is viewed as a proactive mindset rather than a reactive response. With this perspective, change is embraced, creativity is encouraged, and adaptation to shifting market conditions is facilitated (Gorondutse, et al., 2024). Through such thinking, resources are allocated more effectively and emerging opportunities are maximized, thereby strengthening resilience in competitive markets (Norzalan, et al., 2024). Additionally, strategic thinking has been linked with the promotion of teamwork and open communication, enabling alignment towards shared goals while nurturing a culture of learning and continuous improvement.

In support of this process, Business Intelligence (BI) systems have been recognized as essential tools that generate data-driven insights. Through these systems, business data is collected, analysed, and presented to provide historical, real-time, and predictive perspectives (Martins, et al., 2024). With technological infrastructures designed to process large volumes of information, organizations are empowered to enhance adaptability and improve overall performance. The transformation of raw data into actionable intelligence is made possible, thereby strengthening decision-making across all organizational levels (Trieu, 2022). It was further highlighted by Trieu, (2022) that between 70% and 85% of organizations experienced improved performance expectations and operational growth following the adoption of BI systems.

When strategically applied, BI systems are employed to align organizational strategies with reliable, data-based insights. In this manner, decision-making is anchored in accurate information, operational agility is enhanced, and sustainable growth is supported (Martins, et al., 2024). Furthermore, BI technologies are utilized to establish data warehouses where information is centralized and refined, thereby facilitating initiatives that maximize competitiveness and allow effective responses to changing market forces (Dixit, et al., 2021). In contemporary business landscapes, the combination of strategic thinking and BI systems has been considered indispensable. By adopting a forward-looking orientation alongside technological intelligence, organizations are enabled to confront challenges proactively, harness new

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opportunities, and safeguard their long-term success. Ultimately, the integration of BI systems ensures that data is continuously converted into actionable insights, improving decision-making processes and building resilience within competitive markets. As businesses continue to evolve, both strategic thinking and BI systems will remain central to advancing innovation, efficiency, and long-term strategic alignment in organizational operations.

2.1 Statement of the Problem

Strategic thinking is often linked with setting long-term goals and shaping the future direction of organizations. But when paired with Business Intelligence (BI) systems designed to thrive on data-driven choices where partnership rarely comes without challenges. A gap is frequently seen between the broad vision of strategy and the technical functions of BI, whose complex infrastructures make alignment anything but simple. Few professionals are found to operate comfortably in both worlds, and organizations continue to struggle in bridging this gap and research, too, has offered little clarity. Most studies have been carried out in developed economies, leaving contexts such as Nigeria and companies like Coca-Cola Nigeria Plc in Abuja largely overlooked (Faúndez, & De La Fuente-Mella, 2022; Kula, & Naktiyok, 2021). Even more telling is the lack of work exploring how dimensions of strategic thinking such as systems, innovative, and critical thinking interact with BI elements like strategic, competitive, and technological intelligence (Kula, & Naktiyok, 2021; Adamik, 2023). The result is a field riddled with uncertainty. Evidence remains scattered and often inconsistent, offering no firm conclusion on how strategic thinking influences the success of BI systems. Until more targeted research is undertaken, especially in developing economies, the full potential of aligning strategic thinking with data-driven intelligence will remain underexplored (Olaleye, et al., 2021; Talaoui, et al., 2020; Panchal, et al., 2024). This study aims to contribute to the existing body of knowledge by addressing these gaps through an examination of strategic thinking and the implementation of BI systems within Coca-Cola Nigeria Plc, Abuja. Based on these study problems the following hypotheses was formulated to guide the study:

Ho1: Systems thinking has no significant effect on strategic intelligence in Coca Cola Nigeria Plc, Abuja.

Ho2: Critical thinking has no significant influence on competitive intelligence in Coca Cola Nigeria Plc, Abuja.

Ho3: Innovative thinking has not affected technological intelligence in Coca Cola Nigeria Plc, Abuja.

II. CONCEPTUAL REVIEW

2.1 Strategic Thinking

The art of strategic thinking is increasingly being described as a necessity rather than an option in today's complex business climate. It has been defined as the capacity to interpret complicated realities, project possible future developments, and design practical roadmaps aimed at long-term success. Unlike day-to-day problem-solving, the practice is portrayed as a wider lens, one that prioritises foresight and pays attention to how different variables connect and evolve over time. Within this frame, risks and opportunities are not only measured but also reimagined in creative ways, with strategies shaped in harmony with organisational values and future aspirations (Geier, 2024). The ultimate aim, according to scholars, is to uncover possibilities often overlooked—potentials that could drive adaptability and sustainability in the long run (Gorondutse, et al., 2024). This journey is seen as one of discovery, prediction, and disciplined execution, where concrete yet flexible action plans are placed at the core (Pirela, et al., 2024).

In volatile environments, where uncertainty has become the rule rather than the exception, the practice of strategic thinking is framed as indispensable for leadership. Decision-makers are encouraged to weigh risks carefully, create room for flexibility, and prepare contingency plans to cushion unexpected shifts (Novelli, & Spina, 2024). When embedded in an organisation, this mindset reflects a pledge to proactive governance and an appetite for continuous evolution. Resilience and creativity are nurtured when a culture of feedback, innovation, and learning is promoted. Analysts also point to the value of folding environmental scans into strategy, as this alignment with external trends ensures organisations remain attuned to societal, economic, and technological transformations (Popoola, et al., 2024; Joel, & Oguanobi, 2024). Such integration has been credited with sparking innovation while anchoring sustainable growth (Ledi, et al., 2024; Sa'ari, et al., 2024).

Strategic thinking, it has been argued, safeguards competitiveness by shifting the focus from short-term wins to long-term resilience (Foster, et al., 2023; Al-Dosari, 2024). By scanning early for threats and possibilities, organisations are better positioned to adapt and to innovate. More importantly, when social, environmental, and economic considerations are interwoven into the process, the contribution to sustainable development becomes evident (Ledi, et al., 2024; Sa'ari, et al., 2024). Ultimately, embedding strategic thinking into everyday organisational practices is seen as a safeguard of relevance, resilience, and durability in an uncertain future (Dixit, et al., 2021).

Systems Thinking: In management circles, a growing emphasis has been placed on systems thinking which is an approach that views problems not as isolated events but as interconnected parts of a larger structure. Organizations are being encouraged to see how changes in one department create ripples across others, making interdependence central to decision-making (Cechvala, 2024; Wan Rosely, & Voulvoulis, 2024). This perspective has been credited with breaking down silos, fostering collaboration, and improving efficiency through continuous learning and feedback loops (Briceno Brignole, 2024; Nadav, et al., 2024). Businesses adopting the model are said to manage complexity more effectively while strengthening their use of business intelligence systems (Panchal, et al., 2024).

Critical Thinking: Critical thinking has increasingly been promoted as a safeguard against flawed judgment in fast-changing environments. Information is no longer consumed passively but is instead tested, evaluated, and reinterpreted (Deo, & Hölttä-Otto, 2024; Butler, 2024). Within firms, this has been associated with better decision-making, as evidence is weighed against assumptions and alternative outcomes are considered (Lee, et al., 2024). Scholars argued that the skill, long valued in education and law, is now essential in business where resilience and rationality are demanded by technological disruption and global competition (Shafieieh, et al., 2024).

Innovative Thinking: Equally vital has been innovative thinking, where convention is set aside in search of bold, original solutions. Risk-taking and persistence in the face of uncertainty are often linked to this mindset, which has been described as the engine of entrepreneurship and organizational renewal (Baričević, & Luić, 2023; Ekanem, 2024). By encouraging fresh ideas and unconventional strategies, companies are reported to strengthen competitiveness and accelerate growth (Ramírez, et al., 2024; Sutrisno, et al., 2024). Industries that embrace such creativity are being reshaped, as innovation becomes the currency of long-term survival (Avcı & Durak, 2023; McCracken & Russ-Eft, 2025).

2.2 Business Intelligence System

In today's corporate landscape, the role of Business Intelligence (BI) is being reshaped as organizations increasingly turn to data-driven systems to navigate uncertainty and sharpen competitiveness. Defined not merely as a software tool but as a technology-enabled framework, BI is widely recognized for transforming raw information into actionable insights that guide decision-making. Within boardrooms and executive offices, BI platforms are being relied upon to track market trends, evaluate competitive positions, and identify risks that could undermine long-term business sustainability (Alnawafleh, et al., 2024; Ovivi & Bello, 2022). Rather than being viewed as an optional support tool, BI is now regarded as a strategic necessity. Data on technology shifts, rival activities, and emerging risks is consolidated by these systems, allowing pressing business challenges to be diagnosed and solutions to be designed with precision. By facilitating sharper strategic planning, BI has been credited with improving both operational resilience and the quality of decisions taken in complex environments (Martins, et al., 2024; Chebrolu, 2025; Tsiu, et al., 2025).

Increasingly, BI is also being described as an intelligent knowledge system, one capable of processing vast volumes of structured and unstructured data from both internal departments and external stakeholders use to optimised strategic business decisions (Siddiqui, 2025). Within the digital economy, its role has expanded into the everyday mechanics of management, where efficiency gains and competitive advantages are shaped by data-driven choices (Jiménez-Partearroyo, & Medina-López, 2024; Mahabub et al., 2025). The emergence of big data analytics has reinforced this trend, equipping firms with deeper insights that strengthen performance and profitability (Ogborigbo, et al., 2024). Market positioning, too, has been

sharpened through these tools, with organizations leveraging BI to interpret consumer patterns and industry dynamics (Kongthanasuwan, et al., 2023; Hurbean, et al., 2023).

Yet BI's strategic strength is not confined to efficiency alone. Its value is increasingly tied to technological innovation and entrepreneurship. In the worlds of tech and manufacturing, BI has become foundational to the pursuit of innovation, enabling organizations to keep pace with Industry 4.0 transitions and digital entrepreneurship (Mohammed, et al., 2024; Chen, et al., 2025). For small and medium-sized enterprises, including those operating in high-growth markets such as Lagos, Nigeria, the system's relevance is underscored by its role in navigating operational risks while supporting sustainable practices (Uchechukwu, 2024; Olubiyi & Akinlabi, 2025). Ultimately, experts argue that BI's true impact emerges when advanced technologies are aligned with human capabilities. In fast-changing environments, organizations that succeed are often those where analytical tools are complemented by skilled interpretation and adaptive strategies (Omol, et al., 2024; Ovivi, 2022). In that sense, BI is no longer just a technology investment—it has become an organizational mindset, shaping how decisions are made, how risks are confronted, and how futures are secured.

Strategic Intelligence (SI): has been described by recent scholars as the backbone of organizational direction. It is no longer seen simply as a tool for collecting information; rather, it is being recognised as a predictive mechanism that determines whether long-term goals are achieved or missed. Through SI, shifting market patterns, competitor behaviour, and emerging technologies are studied and translated into insights that shape corporate positioning. Its influence is now most visible in how companies align their strategies with performance objectives, ensuring that operations stay relevant in turbulent economies (Paiuc, et al., 2024; Douhid, et al., 2024). Research suggested that decisions made without SI risk being reactive, while those informed by it tend to sharpen competitiveness and sustain growth (Zarafili, & Zarafili, 2023; Paiuc, et al., 2024). Analysts have further pointed to its role in strengthening organizational sustainability, boosting profitability, and embedding knowledge management as a lasting advantage (Al-Kubaisi, 2023; Roustaei & Taghavi, 2023).

Competitive Intelligence (CI): has been placed under the spotlight for its role in monitoring rivals, scanning external environments, and decoding market conditions. In global commerce, where competition is relentless, CI has been credited with equipping firms to respond with precision rather than guesswork (Yucra, et al., 2024). Its value is being underscored not only in strengthening a company's market stance but also in improving operational efficiency and ensuring that competitive edges are sustained (Kettani, et al., 2024; Wu, et al., 2023). Small and medium-sized enterprises, in particular, are believed to benefit enormously, as CI enhances their agility and ability to thrive against larger players (Nzeki, et al., 2024; Popoola, et al., 2024).

Technological Intelligence (TI): has emerged as the third pillar of business survival. No longer just about understanding tools, TI is being tied directly to the digital transformation sweeping across industries. Business Intelligence (BI) systems are said to function effectively only when powered by TI—through advanced software, artificial intelligence, robotics, cloud computing, and the Internet of Things (IoT). These technologies are reshaping manufacturing floors, altering production lines, and redefining how efficiency is measured (Usman, et al., 2024). During the COVID-19 crisis, TI was credited with helping companies bypass disruptions and craft rapid responses, making it clear that technology is no longer optional but essential to survival (Coccia, 2024). Recent discussions, however, note that despite its critical role, research on TI's evolving impact remains surprisingly limited (Kirbac, et al., 2023; Flamand, & Coustumer, 2024).

2.3 Strategic Thinking and Business Intelligence Systems in Corporate Organizations

Strategic thinking is crucial in enhancing the effectiveness of Business Intelligence (BI) systems within corporate organizations. It equips strategic thinkers with the necessary skills to align BI system implementation with organizational goals and objectives. By comprehending the strategic aims and the influence of strategic thinking, BI system managers can devise sustainable approaches for data gathering and analysis, directly supporting decision-making processes that align with these objectives. The application of strategic thinking in contemporary operational settings helps prioritize data collection, analysis, and reporting, ensuring that resources are efficiently allocated to areas that most significantly

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impact the organization's strategy. Effective strategic thinking improves BI systems' ability to deliver actionable insights for informed business decisions. Leaders who engage in strategic thinking are better positioned to interpret data trends and patterns, facilitating timely and insightful decision-making. When strategic thinking is integrated with BI systems in modern operational settings, it enables scenario planning and forecasting, empowering organizations to anticipate future challenges and opportunities (Olaleye, et al., 2021). In a rapidly changing business landscape, strategic thinking ensures that BI systems remain adaptable and functional. Organizations can swiftly adjust their BI strategies in response to market, technological, or competitive shifts (Safaei, & HeidarianBayi, 2022). Furthermore, strategic thinking creates an environment where BI systems are proactively used to uncover new opportunities for innovation and growth. The application of strategic thinking in BI system implementation can help organizations gain deep insights into market trends, customer preferences, and competitor strategies, offering a competitive edge (Al-Shaikh, et al., 2024). Overall, strategic thinking significantly enhances the effectiveness of BI systems by ensuring their alignment with organizational goals, adaptability, and capacity to provide valuable insights for decision-making and gaining a competitive advantage. Few studies have been conducted on the relationship between strategic thinking and BI systems within corporate organizations (Ogborigbo, et al., 2024; Olaleye, et al., 2021; Safaei, & HeidarianBayi, 2022). Based on the above discussion regarding the strategic effect of strategic thinking on BI system implementation in operational settings, the following study conceptual framework/model has been proposed.

CONCEPTUAL FRAMEWORK

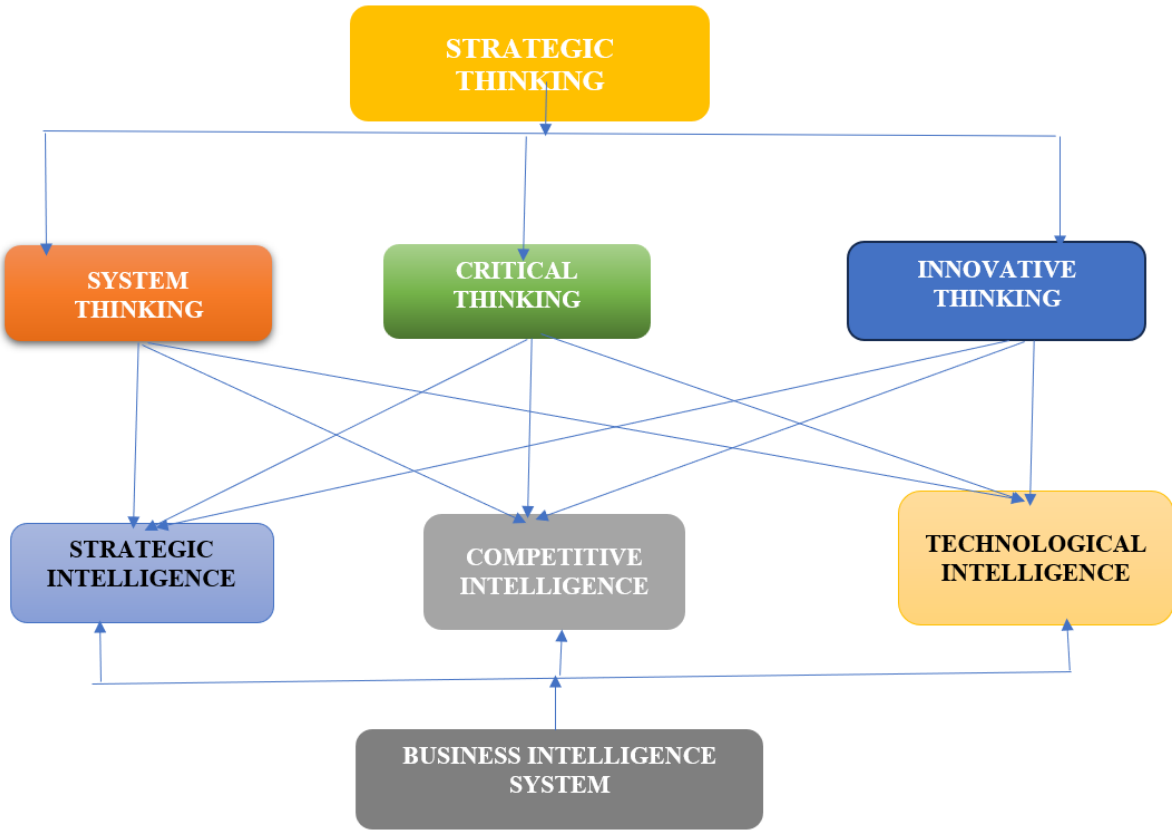

Fig 2.1: Conceptual Model on Strategic Thinking and Business Intelligence System (Researchers, 2025).

The research model explores the integration of strategic thinking comprising system thinking, critical thinking, and innovative thinking with business intelligence (BI) systems, including strategic, competitive, and technological intelligence. This combination fosters synergy that enhances decision-making, strategic alignment, and innovation. System thinking, when used by strategic leaders, offers a holistic understanding of the organization and its environment, allowing them to anticipate long-term impacts and align strategic decisions accordingly. Critical thinking supports

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competitive intelligence by helping leaders analyse competitor data effectively, enabling a sharper competitive edge. Meanwhile, innovative thinking drives technological intelligence by promoting openness to new technologies and ideas, positioning organizations to benefit from technological change. This dynamic helps organizations become proactive, leveraging innovation as a strategic tool for growth and market relevance. However, the model's success hinges on effectively aligning thinking styles with BI systems and ensuring decision-makers possess the skills to interpret data. Organizational culture plays a pivotal role in businesses that prioritize strategic thinking and intelligence tools are more likely to achieve sustained success.

2.4 Theoretical Framework

The Intelligence Volatility Assessment (IVA) Theory, first introduced by A. J. Ovivi in 2020, has been positioned as an extension of the earlier Technology, Organization, and Environment (TOE) framework developed by Torbatzky and Fleisher in 1990. While the TOE model had placed emphasis on accessibility, systematic analysis, and evaluation to sustain organizations, the IVA Theory redirected attention to the turbulent and unpredictable nature of contemporary business environments. According to this perspective, the volatility of external conditions exerts a strong influence on the way intelligence is gathered and applied, ultimately shaping operational performance. The theory was conceived during the disruptive years of the COVID-19 pandemic, when sudden shifts in market behaviour and organizational practices underscored the urgent need for intelligence systems that are both adaptive and dynamic (Ovivi, & Bello, 2022). At its heart, the IVA Theory promotes the idea that businesses require highly responsive intelligence frameworks capable of interpreting complexity and reacting quickly to environmental shocks. It has been argued that survival and growth in uncertain contexts cannot be secured unless organizations constantly review and adjust their intelligence processes (Jamiu, et al., 2022). In this view, intelligence must evolve hand-in-hand with shifting business realities to remain relevant and effective. Beyond this, the theory stresses that innovation, creative thinking, and strategic investment flourish only when businesses engage in rigorous environmental assessment. The encouragement given is for firms to align intelligence systems with external turbulence in order to safeguard long-term sustainability. The pandemic acted as a real-world experiment, revealing that companies which embraced intelligence-driven diversification were better positioned to withstand disruption. Yet, despite its practical value, the IVA Theory has not received widespread academic application, with only limited studies incorporating it into their analyses (Ovivi, et al., 2024). Nevertheless, it is being framed as a timely contribution—one that explains how intelligence systems can sustain organizational performance in an era defined by volatility. The theory is further grounded in a set of key assumptions, which outline how intelligence functions should be structured in response to fluctuating environments.

1. Environmental factors are unpredictable, consistent, dynamic, and complex.
2. Intelligence is dynamic and complex, rather than constant.
3. SMARTER intelligence management forecasts future business strengths.
4. Business opportunities and expectations are based on intelligence.
5. Intelligence acts as an essential support for sustainable business performance.

IVA Model: The IVA model further elaborates on how shifts in business contexts can strengthen intelligence gathering and improve operational performance in modern business environments.

BC= Business Contexts
IS= Intelligence System
PS= Performance Sustainability

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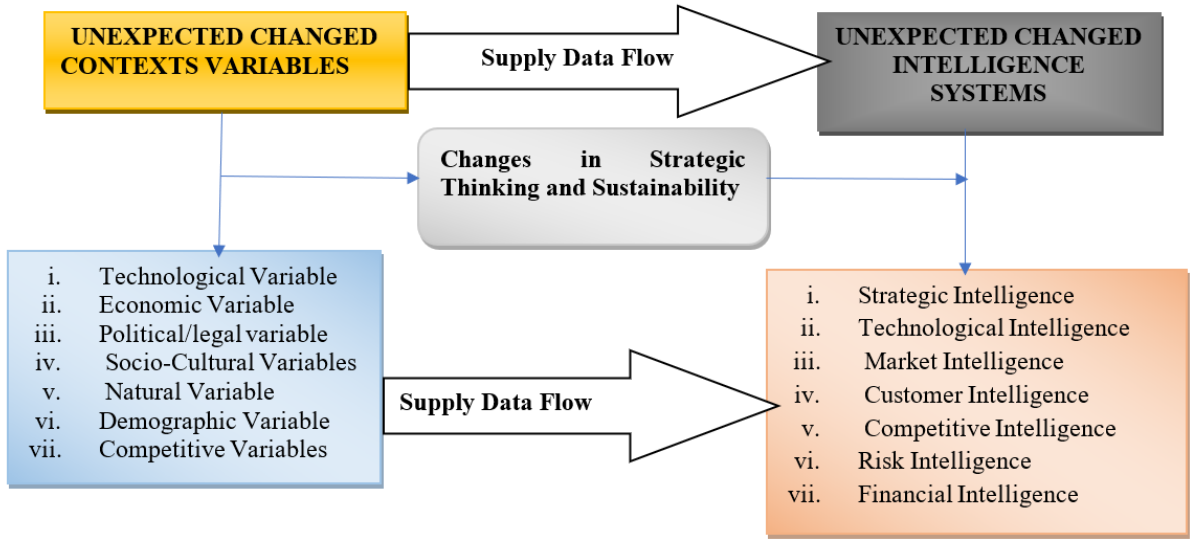

Fig.2.2: IVA MODEL (Ovivi, 2020)

The application of IVA (Intelligence Variation Analysis) theory is highly relevant to Coca-Cola Nigeria Plc, particularly in Abuja's fast-changing business environment. It helps the company analyse and respond to shifts in consumer preferences and market conditions by improving its strategic intelligence and product alignment with current trends. Given the intense competition in the beverage industry, IVA enables Coca-Cola to assess competitors' moves and market positions, supporting more proactive strategic planning. Moreover, IVA theory aids Coca-Cola Nigeria in understanding how changes in technology and customer needs influence its innovation strategy. This allows the company to make better strategic and data-driven decisions about product development, reducing the risk of failure and ensuring that offerings remain competitive and in demand. The theory provides a structured method for turning market intelligence into actionable business strategies. Ultimately, leveraging IVA theory allows Coca-Cola Nigeria to maintain its competitive edge by enhancing its ability to predict, adapt, and grow amid market uncertainties. It supports sustained growth through smarter long-term planning.

2.5 Empirical Review

In a 2022 study, Safaei and HeidarianBayi, investigated how strategic thinking influences innovation and organizational change in the South Khorasan sports management sector, with strategic intelligence as a mediator. Using data from 287 staff members and four validated questionnaires including those developed by Goldman (2005), Wong and Ahmed. (2004), Mill (2003), and Maccobi (2007)—the researchers employed structural equation modelling via LISREL. Their findings revealed a strong, positive influence of strategic thinking on innovation through strategic intelligence, although its effect on organizational change was not significant. The study concluded that strategic thinking helps managers adapt swiftly and foster innovation by offering unique value perspectives (Safaei, & HeidarianBayi, 2022). Kula, and Naktiyok, (2021) expanded this theme by comparing strategic thinking and competitive intelligence in the automotive and telecommunications industries. Their study explored how managers' strategic thinking capabilities impacted their use of competitive intelligence. Using responses from 628 managers across five automotive and three telecom firms, the study found that strategic thinking significantly enhances competitive intelligence in both sectors. This work advanced existing literature by underscoring the critical connection between strategy formulation and competition management, reinforcing that strategic thinker are more adept at navigating competitive environments (Kula & Naktiyok, 2021). Similarly, Olaleye et al. (2021) and Dixit et al. (2021) added further dimensions. Olaleye, et al. found that in Nigerian IT firms, both strategic thinking and competitive intelligence significantly drive innovation capability, with management support enhancing these effects. Their model emphasizes the synergy between these elements for fostering innovation. On the other hand, Dixit et al. (2021) revealed that strategic thinking is positively shaped by creativity, corporate culture, and knowledge management, all of which directly boost competitive

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advantage. However, these factors did not mediate the relationship between strategic thinking and advantage, suggesting strategic thinking plays an independent and crucial role in organizational competitiveness.

III. METHODOLOGY

3.1 Research Designs

A survey research design was used to examine how strategic thinking influences the business intelligence system at Coca-Cola Nigeria Plc in Abuja. This method allowed for the collection of relevant data from a broad spectrum of internal stakeholders, including strategic administrators and policymakers. The structured questionnaire developed ensured that responses captured the perceptions and roles of those directly involved in strategic decision-making.

3.2 Population of the Study

The study focused on staff at the regional office, targeting 58 top-level and 156 middle-level managers. These individuals play crucial roles in shaping and executing strategies, making their feedback essential to evaluating the effectiveness of the company's business intelligence system.

$$n= \frac{N}{1+N(e)^2}$$

Where: N = Population Size 1= Constant
n= Sample size
e = Error of Margin $(0.05)^2$

$$n = \frac{214}{1+214(0.05)^2} \qquad n = \frac{214}{1+214(0.0025)} = \frac{214}{1+0.535}$$

$$n = \frac{214}{1.535}$$

n = 139.41
Approximately = 139 Respondents

Table 3.1 Population Frame

S/N	Coca-Cola Nigeria Plc, Abuja	Population
1.	Top Management Staff	58
2.	Middle Management Staff	156
Total		214

Researcher's Computation (2025)

3.3 Sampling Techniques and Sample Size Determination

The study employed probability sampling techniques to ensure fairness in selecting participants from Coca-Cola Nigeria Plc, Abuja. Stratified sampling was first used to group staff into Top Management and Middle Management categories. Within each group, simple random sampling was applied, giving every individual an equal opportunity to be selected. To determine the sample size, the Taro Yamane (1967) formula was adopted. This approach ensured that a balanced and representative number of respondents was 139 in total and were chosen from the staff population, promoting accurate and inclusive participation in the study.

3.4 Sources and Methods of Data Collection

Primary data for the study was obtained using a structured, closed-ended questionnaire distributed directly by the researcher and a team of experts in strategic thinking and business intelligence. The instrument featured a five-point Likert scale, ranging from Strongly Agree (5) to Strongly Disagree (1), to assess respondents' opinions on various statements. The face-to-face distribution method helped ensure accountability and accuracy in data collection, and all gathered responses were later organized and analysed using percentage-based techniques for clarity and interpretation. In the second phase, the questionnaire was delivered in a sealed envelope to the HR departments at Coca-Cola Nigeria Plc in Abuja. It contained 25 items—five covering biographical details and 20 addressing the main research variables. Of the 139 questionnaires issued (38 to top-level and 101 to middle-level managers), 132 were returned completed, marking a 95% response rate.

3.5 Methods of Data Analysis

The study utilized a combination of descriptive and inferential statistical tools, such as tables, percentages, means, and standard deviations, to provide an overview of the data collected. These tools helped to reveal central trends and variations in the responses. In addition, Structural Equation Modelling (SEM), particularly the Partial Least Squares approach (PLS-SEM), was employed to

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analyse the interrelationships among the study variables. This technique allowed the researchers to assess both the strength and direction of relationships between the independent (exogenous) and dependent (endogenous) variables (DeVault, 2018). PLS-SEM proved useful in evaluating reflective models by examining how specific factors like strategic thinking effect in the implementation of business intelligence systems in manufacturing firms. The method enabled the validation of the measurement model and helped clarify the causal pathways between the constructs. Overall, it offered insights into the alignment and strength of influence between strategic thinking and business intelligence system adoption within Nigerian manufacturing companies.

IV. DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Test of Hypotheses

The study used partial least square structural equation model for the analysis of the study hypotheses. This technique encompasses the use of 2 broad approaches, which is the measurement model and the structural model (Hair, et al., 2022). Following the recommendations of extant literature, this measurement model result is presented, which is rightly followed by the structural model result.

4.2 Measurement Model Results

The measurement model was thoroughly assessed to ensure the constructs' reliability and validity. The independent variables which are systems thinking, critical thinking, and innovative thinking—were evaluated alongside dependent variables such as strategic, competitive, and technological intelligence. All factor loadings exceeded 0.70, indicating that the indicators strongly represent their respective constructs, thereby confirming construct validity (Hair, et al., 2022). This validation supports the model's readiness for structural analysis, as each indicator aligns closely with the latent variables it measures. In addition, internal consistency reliability was confirmed through Cronbach's alpha, with all values surpassing the 0.70 threshold, demonstrating that items within each construct are internally consistent (Hair, et al., 2022). Composite reliability also met the 0.70 benchmark, further confirming strong internal reliability (Gefen, et al., 2010). Convergent validity was verified using the Average Variance Extracted (AVE), and all values were above 0.50, indicating that the constructs sufficiently capture the variance of their indicators (Hair, et al., 2022).

Table 4.15: Measurement Model Results

Construct	Cronbach's Alpha	Composite Reliability	AVE	Indicator	Factor Loading
Systems Thinking	0.82	0.88	0.65	ST1	0.78
				ST2	0.81
				ST3	0.84
				ST4	0.80
Critical Thinking	0.79	0.85	0.61	CT1	0.75
				CT2	0.77
				CT3	0.80
				CT4	0.78
Innovative Thinking	0.81	0.87	0.63	IT1	0.79
				IT2	0.82
				IT3	0.83
				IT4	0.80
Strategic Intelligence	0.83	0.89	0.67	SI1	0.76
				SI2	0.79
				SI3	0.81
				SI4	0.78
Competitive Intelligence	0.80	0.86	0.62	CI1	0.77
				CI2	0.80
				CI3	0.83

				CI4	0.79
Technological Intelligence	0.82	0.88	0.64	TI1	0.74
				TI2	0.78
				TI3	0.82
				TI4	0.79

Source: Field work, 2025

The HTMT ratio is used to assess discriminant validity, ensuring that each construct is distinct from others in the model. The HTMT value should ideally be below 0.90 for constructs that are conceptually similar and below 0.85 for those that are conceptually distinct (Hair et al., 2022).

Table 4.16: HTMT Ratio for Discriminant Validity

Construct	Systems Thinking	Critical Thinking	Innovative Thinking	Strategic Intelligence	Competitive Intelligence	Technological Intelligence
Systems Thinking	-	0.68	0.69	0.74	0.68	0.69
Critical Thinking	0.68	-	0.79	0.72	0.77	0.79
Innovative Thinking	0.69	0.79	-	0.75	0.73	0.81
Strategic Intelligence	0.74	0.72	0.75	-	0.68	0.70
Competitive Intelligence	0.68	0.77	0.73	0.68	-	0.74
Technological Intelligence	0.69	0.79	0.81	0.70	0.74	-

Source: Field work, 2025

The HTMT values as shown in table 4.16 for all construct pairs are below 0.85, confirming that each construct is empirically distinct from the others. All constructs like systems thinking and strategic intelligence or innovative thinking and technological intelligence are within acceptable discriminant validity ranges (below 0.85 for conceptually distinct constructs).

Effect Size (f^2)

The effect size (f^2) in PLS-SEM indicates the strength of the relationship between an independent and dependent variable. According to Cohen's guidelines, f^2 values can be interpreted as follows: 0.02 = small effect, 0.15 = Medium effect and 0.35 = Large effect (Sarstedt et al., 2017).

Table 4.17: Effect sizes between constructs

Relationship	Effect Size (f^2)
Systems Thinking → Strategic Intelligence	0.18 (Medium)
Critical Thinking → Competitive Intelligence	0.22 (Medium)
Innovative Thinking → Technological Intelligence	0.30 (Medium)

Source: Field work, 2025

The result shows that systems thinking → strategic intelligence showed medium effect, indicating that Systems Thinking has a moderate impact on Strategic Intelligence. Also, critical thinking → competitive intelligence showed medium effect, suggesting that critical thinking contributes meaningfully to competitive intelligence. Lastly, for innovative thinking → technological intelligence showed medium to high effect, implying a strong impact of Innovative Thinking on Technological Intelligence. These results demonstrate that the independent variables have a notable impact on their respective dependent variables, supporting the model's predictive relevance and significance.

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4.3 Structural Model

In this study, Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed to evaluate the structural relationships between different dimensions of strategic thinking and their respective influences on various forms of intelligence within Coca-Cola Nigeria Plc, Abuja. The structural model was designed to assess the influence of three main constructs—systems thinking, critical thinking, and innovative thinking—on strategic, competitive, and technological intelligence, respectively. The R-squared (R^2) values for competitive, strategic, and technological intelligence represent the proportion of variance in each type of intelligence explained by its respective dimension of strategic thinking within Coca-Cola Nigeria Plc, Abuja. These R^2 values provide insights into the predictive strength of each relationship in the model.

The coefficient for competitive intelligence was (R^2 = 0.322). An R^2 value of 0.322 indicates that 32.2% of the variance in competitive intelligence is explained by critical thinking. This moderate R^2 value suggests that critical thinking is an important, though not sole, contributor to competitive intelligence. The coefficient for strategic intelligence was (R^2 = 0.284) with an R^2 value of 0.284, 28.4% of the variance in strategic intelligence is accounted for by systems thinking. This indicates a moderate relationship, suggesting that while systems thinking positively contributes to strategic intelligence, additional factors may also play a role. The R^2 value for technological intelligence is 0.456, meaning that 45.6% of the variance in technological intelligence is explained by innovative thinking. This R^2 value is the highest among the three, indicating a moderately strong predictive relationship.

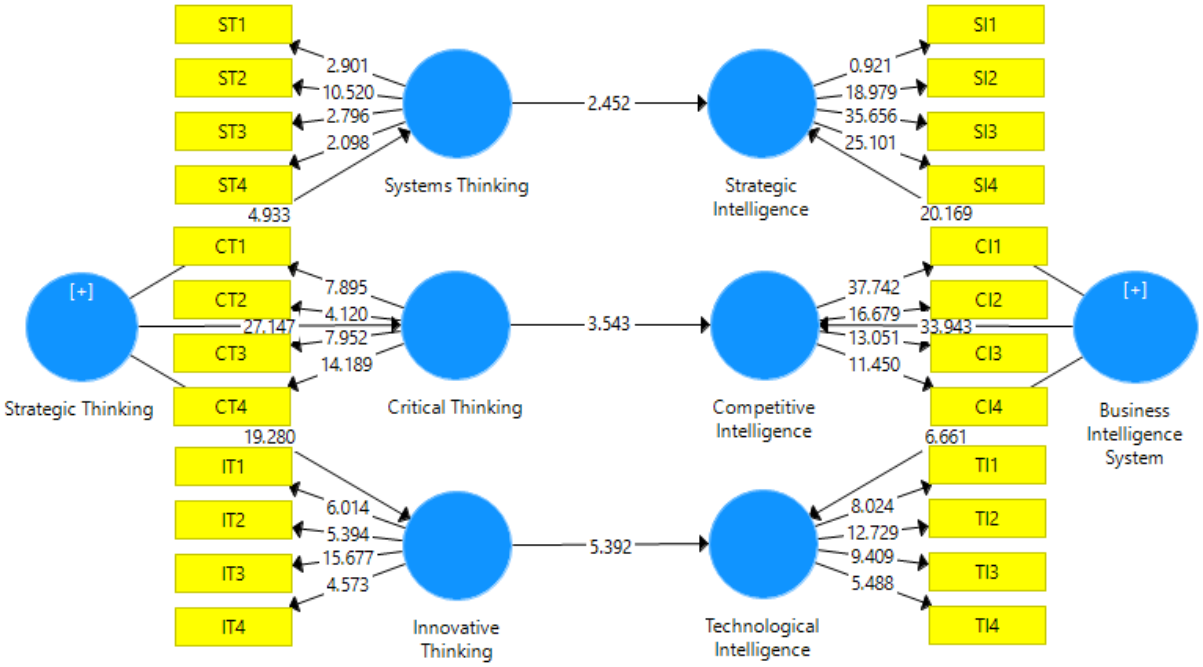

Figure 4.1: Structural Model showing the relationship between Strategic Thinking and the Implementation of Business Intelligence System of Coca Cola Nigeria Plc, Abuja

Table 4.18: Summary of SEM Results and Findings

Hypothesis	Variable	Path Coefficient	t-value	p-value	Decision
H_{o1}	Systems Thinking → Strategic Intelligence	0.284	2.452	0.004	Reject
H_{o2}	Critical Thinking → Competitive Intelligence	0.322	3.543	0.002	Reject
H_{o3}	Innovative Thinking → Technological Intelligence	0.456	5.392	0.021	Reject

Source: Field work, 2025

The study tested each hypothesis using path coefficients, t-values, and p-values, and all null hypotheses were rejected, confirming statistically significant relationships. For instance, the hypothesis that systems thinking does not significantly influence strategic intelligence was rejected, as indicated by a path coefficient of $\beta = 0.284$, a t-value of 2.452, and a p-value of 0.004. This demonstrates that systems thinking plays a vital role in enhancing strategic intelligence by helping employees understand interdependencies and make decisions aligned with organizational goals. Coca-Cola Nigeria Plc can leverage this by encouraging systems thinking to improve strategic clarity and coordination.

Similarly, critical thinking was found to significantly affect competitive intelligence, supported by a path coefficient of $\beta = 0.322$, a t-value of 3.543, and a p-value of 0.002. This suggests that employees who think critically can identify market trends and threats more effectively. Lastly, innovative thinking had a strong positive impact on technological intelligence ($\beta = 0.456$; $t = 5.392$; $p = 0.021$), implying that innovation drives technological advancement in Coca-Cola Nigeria Plc (Okonkwo, 2024).

4.4 Discussion of Findings

The study investigated the role of strategic thinking components systems thinking, critical thinking, and innovative thinking on different dimensions of business intelligence systems in Coca-Cola Nigeria Plc, Abuja. The first hypothesis, which proposed that systems thinking does not significantly influence strategic intelligence, was tested using structural equation modelling (SEM). The results revealed a significant positive effect, consistent with the findings of Cechvala, (2024), and Panchal, et al. (2024), who reported that systems thinking enhances strategic intelligence and corporate performance. However, this conclusion is not universally accepted, as Nadav, et al. (2024) disagreed, suggesting the need for further investigation in different organizational contexts.

The second hypothesis posited that critical thinking has no substantial influence on competitive intelligence in Coca-Cola Nigeria. SEM analysis disproved this, confirming that critical thinking plays a vital role in shaping competitive intelligence. While these results aligned with the arguments of Kimmel, (2024); Lee, et al. (2024); Ruiz-Rojas, et al. (2024); Skrzek-Lubasińska, and Malik, (2023), they contrast with findings from Butler, (2024); Shafieieh, et al. (2024), who viewed critical thinking as having minimal effect. These mixed outcomes highlight the ongoing debate regarding the true value of critical thinking in fostering organizational intelligence in evolving corporate settings.

Regarding the third hypothesis, which claimed that innovative thinking does not affect technological intelligence, the SEM test contradicted this assumption. The study found that innovative thinking significantly influences technological intelligence within Coca-Cola Nigeria. This is in line with the findings of Baričević, and Luić, (2023); Flamand, and Coustumer, (2024) who reported that organizations benefit from enhanced technological intelligence when they promote creativity and innovation in their processes and thinking culture. This finding further supports the argument that fostering innovation leads to smarter use of technology and informed strategic decisions.

Overall, the study affirmed that strategic thinking through systems thinking, critical thinking, and innovative thinking plays a crucial role in the implementation of business intelligence systems. These results are reinforced by empirical literature (Olaleye, et al., 2021; Kula, & Naktiyok, 2021; Dixit, et al., 2021) and supported by the Intelligence Volatility Assessment (IVA) Theory, which offers a structured approach to decision-making in dynamic environments (Ovivi, & Bello, 2022; Jamiu, et al., 2022; Ovivi, et al., 2024). Although Gorondutse, et al. (2024) presented contrary findings, the majority of reviewed evidence affirms the significant role of strategic thinking in achieving organizational competitiveness and sustained growth.

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The data analysed using structural equation modelling led to the conclusion that the adoption and application of strategic thinking significantly influenced the implementation of the business intelligence system at Coca-Cola Nigeria Plc, Abuja. It was determined that the strategic thinking approaches had a profound effect on the implementation of strategic intelligence, competitive intelligence, and technological intelligence within the company. The study further concluded that these approaches were fundamental in enhancing the

business intelligence system at Coca-Cola Nigeria Plc, Abuja, as well as in other corporate environments. This conclusion directly addressed the study's main objective, which focused on exploring the relationship between strategic thinking and the implementation of business intelligence at Coca-Cola Nigeria Plc, Abuja. Additionally, it was concluded that systems thinking had a notable impact on strategic intelligence within the organization. This addressed the research question regarding the extent of the effect of systems thinking on strategic intelligence at Coca-Cola Nigeria Plc, Abuja. The corresponding objective, which was to investigate this effect, was also met. The findings also revealed that critical thinking had a significant influence on competitive intelligence at Coca-Cola Nigeria Plc, Abuja. This conclusion responded to the research question regarding the degree to which critical thinking affected competitive intelligence within the company. The objective to assess this relationship was therefore achieved. Moreover, it was concluded that innovative thinking positively impacted technological intelligence at Coca-Cola Nigeria Plc, Abuja. This conclusion addressed the research question concerning the effect of innovative thinking on technological intelligence in the company and fulfilled the objective to evaluate the extent of this effect.

Recommendations

In line with the findings and conclusions, the researcher offers the following recommendations for Coca-Cola Nigeria Plc, Abuja, to support the achievement of the study's objectives: It is recommended that Coca-Cola Nigeria integrate data from various departments (e.g., supply chain, marketing, finance) to establish a unified strategic intelligence system. This system should facilitate cross-functional insights, helping to identify trends and enabling proactive decision-making. Coca-Cola Nigeria's strategic team should receive training in critical thinking to enhance their ability to assess competitor actions, market trends, and consumer behaviours. This will ensure that Coca-Cola Nigeria remains adaptable and responsive. Furthermore, staff should be trained in data analytics tools that complement critical thinking, ensuring that decisions are data-driven and grounded in competitive intelligence. To foster innovative thinking aligned with technological intelligence, Coca-Cola Nigeria Plc, Abuja, is encouraged to collaborate with start-ups, technology innovators, and research institutions. This collaboration can lead to the integration of external technological solutions that improve operational efficiency and support product development, ultimately reducing research and development costs.

Contributions to Knowledge

This study makes significant contributions to the body of knowledge by addressing research gaps in the field. The model proposed in this study can aid Coca-Cola Nigeria Plc, Abuja, in improving performance and sustainability by adopting a business intelligence system. The study also identified key variables related to strategic thinking and business intelligence systems that can enhance the performance of manufacturing consumable companies in Lagos, Nigeria. Furthermore, the study contributes to the existing literature on strategic thinking (including systems thinking, critical thinking, and innovative thinking) and business intelligence systems (such as strategic intelligence, competitive intelligence, and technological intelligence). These areas had not been previously explored in the context of Coca-Cola Nigeria Plc, Abuja. Additionally, the study will assist scholars, academics, and students in advancing the literature on strategic thinking and business intelligence systems. It may also be beneficial for other corporate settings considering the adoption and application of strategic thinking to implement business intelligence systems in complex and dynamic business environments.

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