
SYSTEMS THINKING AND PERFORMANCE OF PENSION FUND ADMINISTRATORS IN NIGERIA: A PROPOSED MODERATING ROLE OF EMPLOYEE INVOLVEMENT CULTURE

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Abstract

This study proposed a model that suggests interaction between system thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance. In the model, employee involvement culture is incorporated as a moderator in the relationship between systems thinking and organizational performance of Pension Fund Administrators in Nigeria. Review of literature revealed that performance of Pension Fund Administrators in Nigeria has been very low which has made various organizations to seek for exit from the Contributory Pension Scheme. But systems thinking, and employee involvement culture may enhance performance of the Pension Fund Administrators in Nigeria. Thus, the model is proposed to examine the extent to which employee involvement culture may moderate the relationship between systems thinking and organizational performance, which will contribute to understanding of relationship between constructs in pension subsector. The study will guide stakeholders in the pension subsector to understand the proxy of systems thinking that facilitates performance of organizations through moderation of employee involvement culture. The study proposed that an empirical investigation of the moderating effect of employee involvement culture on the relationship between system thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance should be conducted in the future using advanced robust data analysis software such as Partial Least Square Structural Equation Modelling (PLS-SEM).

Keywords: Systems thinking, employee involvement culture, organizational performance

1. Introduction

In contemporary business environment characterised by rapid technological change, increasing completion, and regulatory pressure, organizations are required to adopt a holist management approach to remain competitive in the market. One of those approaches is systems thinking, which views organizations as interrelated components rather than isolated units (Senge, 2006). Organizational performance is one of the major concerns of both scholars and practitioners, given that it reflects the effective and efficient utilization of resources towards achieving organizational objectives (Richard, Devinney, Yip, & Johnson, 2009). Thus, inefficient utilization of organizational resources may lead to poor performance (Dahiru, 2025). Thus, in

Nigerian pension subsector, organizational performance is critical on the grounds that it affects financial security and trust of the contributors and retirees.

The performance of Pension Fund Administrators through contribution of pension assets to economic development, measured by Gross Domestic Product (GDP), continue to show a mix result among the Organization for Economic Corporation and Development countries (OECD, 2025). For instance, the contribution of pension asset to GDP in African countries is very small, with Nigeria contributing (7.8%) which is lower than the contributions of other countries such as Namibia (103.6%), South Africa (83.2%), Botswana (50.0%) and Lesotho (38.8%) due to poor performance of PFAs (OECD, 2025). In Nigeria, despite generating N28 trillion through pension contribution, 27,701 pension contributors dumped their PFAs for another PFA (Tolu-Kusimo, 2025), while 368,911 Retirement Savings Account holders have transferred N1.77 trillion from one PFA to another due to poor performance of PFAs (National Pension Commission, 2025).

The poor performance of the PFAs has compelled the Head of the Civil Service of the Federation and Permanent Secretaries to request for presidential fiat to exit the scheme (Umar, 2023). Also, the personnel of the Nigerian Intelligence Agency (NIA) and National Assembly (NASS) service have been excluded from Contributory Pension Fund (CPF) due to poor performance of the PFAs (Olafusi, 2023). More so, pension contributors and retirees have agitated against poor performance of PFAs in Nigeria (Iwunze, 2023). Nevertheless, Achadinha (2020) argued that pension reforms, modern strategies such as systems thinking of organizations, culture and technological improvement may enhance performance of PFAs.

Systems thinking enable organizations to enhance performance (Alatailat, Elrehail & Emeagwali, 2019). Thus, organizations that adopt systems thinking understand the complexity of the organization and align each activity with overall goal of the organization (Senge, 2006). In the context of PFAs in Nigeria, systems thinking may enhance efficient service delivery and organizational performance. Nonetheless, implementation of system thinking within organizations require organizational culture, which shapes employees behavior, attitude and engagement with the organization (Denison, 1990). Among the dimensions of organizational culture, employee involvement culture underscores participation, empowerment, team work and open communication to enable employees contribute actively in decision making process, understand systemic relationship and support implementation of complex management approach which may enhance organizational performance (Denison & Mishra, 1995).

Employee involvement culture is conceived as the ability of organizations to establish a platform for employees to participate in decision making process, problem solving and continuous improvement in the organization (Lawler, 1996). According to Ologbo and Sofian (2013) employee involvement culture influences organizational performance. Theoretically, employee involvement culture aligns with systems theory which viewed organizations as complex, adaptive, and open systems composed of interdependent subsystems that interact continuously with one another and with the external environment (Bertalanffy, 1968).

Despite the significance of systems thinking and employee involvement culture in organizations, empirical research investigating the relationship between these constructs remains limited, especially within PFAs in Nigeria. Most existing studies focus on direct relationship between the constructs without considering the moderating role of employee

involvement culture. Consequently, there is a need to investigate how employee involvement culture may moderate the relationship between systems thinking proxies namely; continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic, and organizational performance.

In the light of the foregoing, this study proposes a moderating framework that examines the moderating effect of employee involvement culture on the relationship between systems thinking and organizational performance among PFAs in Nigeria. The study seeks to contribute existing body of knowledge on management practices and performance within the pension subsector. Furthermore, the findings are expected to provide practical insight for managers and policy makers seeking to enhance standard of living of pension contributors and retiree through effective and efficient performance of PFAs in Nigeria.

1.2 Statement of Problem

Studies conducted on the relationship between systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance revealed inconsistent results. Among the studies that reported positive association include; Ojo, Salau, Akinlabi (2025); Araújo, Gonçalves, Branco, and Braga (2017); Dias and De Toni (2018); Akhtar, Awan, Naveed, and Ismail (2018).

Other studies reported negative association between systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance **Biswakarma and Bohora** (2025); Zelenyte (2025); Keskin and Palaz (2024); Mbutia (2018); Zhao, Gao, Hao, and Ren (2023); Zhao, Gao, Hao, and Ren (2023); Akhtar, Awan, Naveed and Ismail (2018); Gavetti and Levinthal (2000); and Tang, Pee, and Iijima (2013). In order to address these contradictions, weak or inconsistencies a moderator can be introduced (Lowry & Gaskin, 2014; Baron & Kenny, 1986). Therefore, this study introduced employee involvement culture as a moderator.

The review of literature on systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance showed that the variables are investigated using different qualitative and quantitative tools such as desk review, in-depth interview, focus group discussion, content analysis and mixed methods by Keskin and Palaz (2024) **Biswakarma and Bohora** (2025); Zelenyte (2025); Keskin and Palaz (2024); Mbutia (2018); Zhao, Gao, Hao, and Ren (2023); Ojo, Salau, Akinlabi (2025); Araújo, Gonçalves, Branco, and Braga (2017); Dias and De Toni (2018);. Nevertheless, these tools may not make it possible to cover a great number of the population, and therefore, may not provide details of the phenomenon (Fujii, 2018). The foregoing techniques offer limited modelling capabilities, particularly in terms of causal or complex modelling relationships (Lowry & Gaskin, 2014). Thus, this study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to examine the relationship between systems thinking and organizational performance through moderating effect of employee involvement culture.

Several studies on the relationship between systems thinking and organizational performance were conducted in different contexts such as Brazil, Pakistan, Malaysia, China, Kenya, and Japan by Keskin and Palaz (2024) Branco, and Braga (2017); Dias and De Toni (2018); Akhtar, Awan, Naveed, and Ismail (2018); Zhao, Gao, Hao, and Ren (2023); Zhao, Gao, Hao, and Ren (2023); and Akhtar, Awan, Naveed and Ismail (2018) with less focus on Nigeria, and in particular, Pension Fund Administrators in Nigeria. Hence, caution must be exercised in generalizing their findings to Nigerian due to cultural differences. Other studies conducted in Nigeria focused on banking industry without considering pension subsector (Ojo, Salau & Akinlabi, 2025). Thus, this study will be significant theoretically, methodologically and practically to the academia, practitioners and policy makers respectively.

Against the foregoing background, this study seeks to: (1) investigate the relationship between systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance; and (2) examine the moderating effect of employee involvement culture on the relationship between systems thinking and organizational performance. The hypothesis of the study are as follow:

- i. H_{01} : there is no significant relationship between continuous learning and organizational performance of PFAs in Nigeria.
- ii. H_{02} : there is no significant relationship between dynamic thinking and organizational performance of PFAs in Nigeria.
- iii. H_{03} : there is no significant relationship between understanding mental models and organizational performance of PFAs in Nigeria.
- iv. H_{04} : there is no significant relationship between pattern recognition and organizational performance of PFAs in Nigeria.
- v. H_{05} : there is no significant relationship between process orientation and organizational performance of PFAs in Nigeria.
- vi. H_{06} : there is no significant relationship between systems logic and organizational performance of PFAs in Nigeria.
- vii. H_{07} : there is no significant moderating effect of employee involvement culture on the relationship between continuous learning and organizational performance of PFAs in Nigeria.
- viii. H_{08} : there is no significant moderating effect of employee involvement culture on the relationship between dynamic thinking and organizational performance of PFAs in Nigeria.
- ix. H_{09} : there is no significant moderating effect of employee involvement culture on the relationship between understanding mental models and organizational performance of PFAs in Nigeria.
- x. H_{010} : there is no significant moderating effect of employee involvement culture on the relationship between pattern recognition and organizational performance of PFAs in Nigeria.
- xi. H_{011} : there is no significant moderating effect of employee involvement culture on the relationship between process orientation and organizational performance of PFAs in Nigeria.

- xii. H₀₁₂: there is no significant moderating effect of employee involvement culture on the relationship between systems logic and organizational performance of PFAs in Nigeria.

2.0 Literature Review

This section reviews relevant literature on systems thinking, employee involvement culture, and organizational performance, with particular emphasis on their applicability to PFAs in Nigeria. The review establishes conceptual linkages among the variables and identifies gaps that justify the present study.

2.1 Conceptual Review

2.1.1 Organizational Performance

Organizational performance is one of the most significant variables researched by management scholars in recent times. It is a critical area of management which many scholars have given more attention in knowledge based global economy (Janadari, 2020). Organizational performance is the transformation of input into output to achieve organizational goal (Imran, Aziz, Hamid, Shabbir, Salman, & Jian, 2018). Chen, Sousa, and He, (2016) describe it as the relationship between effective cost and output, and between output and outcome. Ahmad, Farley and Soon, (2014) described organizational performance as value creation for both internal and external stakeholders. It is the efficient and effective utilization of resources, demonstration of responsiveness to customers' need and ensuring fairness among staff toward achieving organizational goal (Dahiru, 2025).

Moreover, Antony and Bhattachary (2010) consider organizational performance as evaluation of organizational activities to formulate and convey value to both internal and external stakeholders. Bruns (1992) identify organizational performance with cost reduction, value and job creation, lean production, competitiveness, growth and long-term survival of enterprise. Ghosh and Mukherjee (2006) explain that in evaluating organizational performance, the emphasis should be on examining the extant behavior of the organization in terms to its efficiency and effectiveness. In their view, the appropriate performance measurement tool should relate to strategic goals of the organization, be verifiable and focus on measurable outputs. In addition, Robbins and Timothy (2011) conceive performance as a measure of output, which is absolutely necessary to match performance measurement with the goals and objectives to be achieved, taking into consideration the levels of effectiveness and efficiency in the organization.

The review of Balance Score Card (BSC) developed by Kaplan and Norton (1996) shows both financial and non-financial components used to assess organizational performance. Kaplan and Norton (1998) evaluate organizational performance from four (4) concepts; financial, learning and growth, customer satisfaction, and internal business process which have been categorized into financial and non-financial, qualitative and quantitative, and objective and subjective approaches (Ayoup, Omar & Abdul Rahman, 2013; Popova & Sharpanskykh, 2010; & Ibrahim, 2015). Financial performance is measured using financial indicators such as return on investment (ROI), return on equities (ROE), return on asset (ROA), costs, sales, and growth,

while non-financial performance measures include product quality, customer satisfaction, delivery on time, efficiency, effectiveness, responsiveness, equity, productivity, market share, employee satisfaction, strategic goal attainment, workforce development and improvement (Richard, Devinney, Yip & Johnson, 2009). For the purpose of this study, organizational performance is considered as the measurement of progress at different levels to ascertain the extent to which predetermined goals of the organization are achieved.

2.1.2 Systems Thinking

Systems thinking was developed in line with system theory (Bertalanffy, 1968) characterise with the interaction of its components. It is a critical element of strategic thinking predicated on the ability to take holistic view of an organization and its environment rather than individual component. Meaning that organizations should view themselves as members of business ecosystem which cuts across different sectors (Dahiru, 2025). Liedtka (1998a) explained that system thinking is concerned with understanding of both internal and external context of the organization. The external context has been industry-based that has dominated strategy for many years which requires organizations to view themselves as members of business community cutting across different industries, and also, appreciate the interrelationship among the internal piece that, taken together, comprise the whole (Moore, 1993).

More so, Stacey (1996) understood systems thinking as the ability of managers to comprehend how organizations and managerial actions change over time, and the situations that lead to such changes. Buckingham and Coffman (1999) explains that the systems thinking of a strategic thinker sees organizations from combination of different unrelated units/employees competing for organization resources to an overall system in which the relationship of every unit/employee or the entire organization is defined in an integrated manner. This indicates that units/employees will deviate from seeing the organization as combination of daily routine procedure to thinking of how different problems are related to each other, how they affect each other, and how solution to one problem affects the other (Bonn, 2001).

In the same vein, Liedtkat (1998a) presented system thinking as mental model of complete end-to-end system of value creation and understanding of the interdependencies within the system. This indicates that system perspective requires employees to collect and accurately analyse information related to external business environmental in which the organization operates, and develop rational approaches to meet up with environmental changes (Dahiru, Bello & Ibrahim, 2024). Also, it requires the management to ensure even distribution of task among employees, restructures the organizational structure to meet up with external environmental challenges, and rewards creativity at work.

Moreover, previous studies have shown that systems thinking plays significant role in influencing organizational performance (Alatailat et al., 2019). This indicates that organizations that integrate system thinking into their operations, and are able to manage the inter-relationship between the external and internal business environment, may be able to improve their performance on the ground that adequate attention paid to the system and subsystem could yield positive outcome for the organization. This study adopts systems thinking constructs developed by Palaima and Skarzauskiene (2010) which comprises continuous learning, dynamic thinking, understanding mental model, pattern recognition, process orientation, and systems logic.

2.1.3 Continuous Learning

The concept of continuous learning has attracted the attention of scholars across disciplines such as organizational studies, management, and human resource development. For example, Hashemi-Pour and Chai (2025) defined continuous learning as a process through which individuals continually develop new competencies while reinforcing previously acquired knowledge in both formal and informal contexts. In other words, continuous learning is a lifelong process of acquiring knowledge, experiences, and capabilities in order to adapt to changing circumstances and professional demands. These perspectives emphasize the dynamic and lifelong nature of learning.

Scholars in organizational studies such as Senge (2006) describes continuous learning as the **ongoing expansion of individuals' capacity to create desired results through reflection, inquiry, and the continual development of new knowledge and skills** within a learning organization. Similarly, Argyris and Schön (1996) conceptualize continuous learning as a process in which individuals and organizations continually examine and modify their assumptions, behaviors, and strategies through feedback and reflection.

In workplace learning literature, continuous learning is the **ability of organizations to create, acquire, interpret, and transfer knowledge while modifying behavior to reflect new insights** (Garvin, 1993). Likewise, Edmondson (2012) describes continuous learning as the collective capability of teams to seek feedback, experiment, and reflect in order to improve performance over time.

Scholars in knowledge management such as Nonaka and Takeuchi (1995) also conceptualize continuous learning as a process of dynamic knowledge creation in organizations through the interaction of tacit and explicit knowledge. Again, Drucker (1999) emphasizes continuous learning as a necessary practice for knowledge workers to maintain relevance and effectiveness in rapidly changing environments. Despite differences in emphasis, this study conceptualize continuous learning as a **continuous, dynamic, and evolving process that supports personal growth, organizational development, and societal progress**.

2.1.4 Dynamic Thinking

Recent research in systems thinking describes dynamic thinking as the capacity to **identify patterns of behavior in systems and interpret how these patterns evolve across time rather than focusing on individual events** (Eidin, Bielik, Touitou, Bowers, McIntyre, Damelin, & Krajcik, 2023). Pamungkas, Waluya, Mariani, and Isnarto (2024) describe dynamic thinking as a **cognitive process that enables learners to flexibly integrate strategies, monitor their reasoning processes, and adapt their approaches while solving complex problems**. Their study identifies several core components of dynamic thinking, including conceptual understanding, monitoring of strategies, and adaptive reasoning.

Again, dynamic thinking is a **complex cognitive process involving abstraction, information processing, and restructuring of knowledge in response to evolving problem contexts** (Dwi Pamungkas, Waluya, Mariani & Isnarto, 2022). This perspective highlights the role of

cognitive flexibility and knowledge transformation in dynamic reasoning. Such perspectives describe dynamic thinking as an adaptive mechanism that balances intuitive and analytical reasoning modes to optimize decision-making performance (Pan, Li, Lian, Snell, Zhou, Yala, Darrell, Keutzer & Suhr, 2025).

In the field of artificial intelligence and cognitive modeling, dynamic thinking is defined as a **reasoning strategy that dynamically adjusts the depth and mode of cognitive processing to address problems with varying complexity** (Yao, Mi & Yu, 2024). This perspective highlights the adaptive and context-sensitive nature of thinking processes. Recent research in computational reasoning also conceptualizes dynamic thinking as a **mechanism for adaptively distributing reasoning effort across different stages of problem solving, enabling efficient and flexible decision making** (Guo, Chen, Meng, Gong, Yu, Wei & Chen, 2026).

From a socio-cognitive perspective, Chan (2026) conceptualizes dynamic thinking as a **distributed cognitive process in which learners interact with external cognitive partners, such as artificial intelligence systems, to extend their reasoning capabilities across multiple learning situations**. This definition highlights the role of collaborative and augmented cognition in contemporary learning environments. Within contemporary management and innovation research, dynamic thinking has been described as the ability to **recognize interrelationships within complex systems and use those insights to support innovation and organizational adaptation** (Taylor, 2024). This definition emphasizes strategic thinking and organizational learning. For the purpose of this study, dynamic thinking is explained as multidimensional cognitive capability essential for navigating complex, uncertain, and rapidly changing environments. It enable individuals to interpret patterns of change, anticipate future developments, and adapt reasoning strategies.

2.1.5 Understanding Mental Models

Contemporary cognitive science literature conceptualizes mental models as **structured internal descriptions of situations in the world that guide perception, memory, reasoning, and action** (Summerfield, 2025). Mental models allow individuals to simulate possible scenarios and select appropriate responses in dynamic environments. According to Güneş (2022), a mental model represents a **cognitive structure formed when individuals integrate prior knowledge with new information in order to interpret a situation or phenomenon**. Mental models are described as **cognitive frameworks that individuals use to understand how systems function and how different components of the world interact** (Gosnell & Gordon, 2025). These frameworks shape decision-making processes and influence how individuals respond to environmental and social challenges.

Some scholars describe mental models as **cognitive simulations that individuals use to predict how systems will behave under different conditions** (Mohaddesi, Chicoine, Gong, Ergun, Griffin, Kaeli & Harteveld, 2023). Others define understanding mental models as **the capacity to analyze and revise internal representations in response to new evidence or changing environments** (Fayezioghani, 2023). Veith, Machisi, Ubben, Hennig and

Bitzenbauer (2025) conceptualize mental models as **knowledge structures that learners construct in order to explain relationships between concepts and phenomena**

Recent design cognition research conceptualizes mental models as **internal representations that guide individuals' understanding of systems, influencing how they think, behave, and collaborate in problem-solving contexts** (Cash, Dekoninck & Ahmed-Kristensen, 2025). For the purpose of current study, understanding mental models involves recognizing and interpreting the internal cognitive frameworks through which individuals perceive reality, decision making, and interaction with complex systems.

2.1.6 Pattern Recognition

The concept of **pattern recognition** has become increasingly significant in contemporary scholarship across disciplines such as artificial intelligence, cognitive science, neuroscience, data analytics, and decision sciences. For example, Kazimova, Serikbayeva, Samashova, Zatyneyko and Sarsenbayeva (2025) explained that pattern recognition is **the ability of computational systems to detect arrangements or recurring relationships within datasets in order to classify, interpret, or predict outcomes**. Eysenck and Keane (2021) conceptualized pattern recognition as **a mental process through which information received from the environment is matched with stored knowledge in memory in order to interpret and anticipate events**.

Pattern recognition is conceived as **a cognitive mechanism that links sensory input with previously stored knowledge structures to enable identification and prediction of environmental stimuli** (Goldstein, 2022). This signifies that it is **a computational process that enables systems to automatically identify meaningful regularities in data through statistical learning techniques** (Sharma, 2021).

Aggarwal (2021) explained that pattern recognition is **the process of identification and classification of patterns in large datasets using algorithms that learn from examples**. Contemporary research in artificial intelligence also conceived pattern recognition as **the process through which intelligent systems analyze data structures in order to categorize inputs into meaningful classes** (Goodfellow, Bengio, & Courville, 2021). It is **a core capability of intelligent agents that enables them to interpret complex environments and make informed decisions** (Nilsson, 2021). This perspective highlights the role of deep learning techniques in extracting complex hierarchical patterns from large datasets. For the purpose of this study, pattern recognition is considered as **multidimensional concept encompassing cognitive, computational, and analytical processes through which meaningful patterns are identified within complex data or environment**.

2.1.7 Process Orientation

The concept of **process orientation** has gained significant prominence in contemporary management, information systems, and organizational studies literature. For instance, recent research by Prabowo, Mursyada and Saifulloh (2025) defined process orientation as **an organizational perspective that focuses on managing activities as integrated processes that collectively create value for customers and stakeholders**. It is a managerial approach

in which business processes are considered the primary unit of analysis and improvement within an organization (Ozkan, Koops, Türetken & Reijers, 2023). In this view, organizations focus on designing, monitoring, and optimizing processes to enhance performance and operational efficiency.

Process orientation is **an organizational capability that enables companies to coordinate activities across departments through clearly defined and continuously improved business processes** (Harjanto & Mahendrawathi, 2023). Modern process management literature describes process orientation as **a strategic management philosophy that emphasizes understanding how work is performed across organizational boundaries in order to improve efficiency, quality, and customer satisfaction** (Ndalamba & Tomé, 2021). This study conceptualize process orientation as organizational philosophy and management approach that emphasizes viewing organizations as interconnected processes designed to deliver value to customers rather than as isolated functional departments.

2.1.8 Systems Logic

Systems logic is **a systems thinking capability that enables individuals to understand internal and external forces shaping organizational change and system behavior** (Pilato & Voss, 2024). It is **a reasoning approach that focuses on relationships, feedback mechanisms, and interactions among system components rather than isolated variables** (Sterman, 2020). This perspective highlights the importance of understanding how system elements interact within a larger network of interdependencies.

More so, systems logic is conceived as **the cognitive ability to understand how components within a system interact to produce emergent behavior that cannot be explained solely by analyzing individual parts** (Elsawah, Ho & Ryan, 2022). It is **a cognitive capability that enables individuals to analyze cause-and-effect relationships within complex systems** (Boers & Rypdal, 2021). This means it is **the application of systemic reasoning to identify interdependencies among components within a dynamic environment** (Meadows, 2021). This is **the reasoning structure that allows individuals to interpret complex systems through relationships, interactions, and systemic causality** (Cabrera & Cabrera, 2023). Consequently, this study conceived systems logic as **the reasoning framework that enables individuals and organizations to interpret complex systems by analyzing the relationships, feedback mechanisms, and structural dynamics that influence system behavior over time**.

2.1.9 Employee Involvement Culture (EIC)

Scholars believe that culture consists of values, beliefs and assumptions which are shared or communicated among members (Tierney & Schein, 1986). Denison and Mishra (1995) develop a model that helps to explain differences in performance of organizations (Sparrow, 2001). The model identified employee involvement culture as one of the essential elements in enhancing organizational performance.

Employee involvement culture gives employees opportunity to participate in determining the direction and operations of the organization. Glew, O’Leary-Kelly, Griffin and Van Fleet (1995) explained that it is an effort of management to provide opportunities for employees at middle and lower levels to participate and or contribute in one or more areas toward achieving organizational goal. Sofijanova and Zabijakin-Chatleska (2013) conceptualized employee involvement culture as participation of employees in decision making, problem solving and increased autonomy in work process.

Employee involvement culture is the empowerment and participation of employees in decision making on activities suitable to their ranks in the organization (Kumari & Kumari, 2014). It is a joint decision making process between the management and subordinates (Dahiru, 2025). Engelen, Flatten, Thalmann and Brettel (2014) explained that employee involvement culture is determine by transparent communication, employee-focused leadership, and strong interpersonal relationship in organizations. Against the foregoing background, this study adopts the concept of employee involvement culture as deliberate management effort aimed at expanding responsibilities of employees or group of employees at different levels to discharge their responsibilities toward enhancing organizational performance (Dahiru, 2025).

2.2 Empirical Review

2.2.1 Continuous Learning and Organizational Performance

Recent study by Ojo, Salau, Akinlabi (2025) on continuous learning and employee performance in Nigerian banking sector used a sample of 331 respondents from selected money deposit banks. The result show that continuous learning significantly improves organizational performance. The findings of the study cannot be generalized on the grounds that the study focused on deposit money banks in Nigeria without considering pension subsector which would have made more contribution. More so, the study ignored the moderating role of employee involvement culture on the relationship between the constructs.

Again, Mbutia (2018) examined the *learning organization dimensions and organizational performance of commercial banks in Kenya. The result showed that learning organization dimension positively influence organizational performance.* Although findings of the study support **positive relationships between dimensions of learning organization and organizational performance, but** it actually provides **mixed findings**, which are highly valuable for current study. The findings of the study are judgemental given that it ignored other equally important subsectors such as insurance. The study recommended conduct of similar study in insurance industry. Moreover, the study did not consider moderating role of employee involvement culture which would have made more contribution.

However, the study by Keskin and Palaz (2024) investigates the relationship between organizational learning, organizational resilience capacity, and organizational performance within the banking sector. Conducted across twenty six (26) banks with five hundred and forty one (541) respondents, the study employed a cross-sectional survey design and analyzed data

using Structural Equation Modelling (SEM) to ensure robustness in testing both direct and indirect relationships among constructs. Empirically, the study found **no direct significant relationship between organizational learning and organizational performance**. Instead, the relationship is **fully mediated by organizational resilience**. Thus, the findings cannot be generalized given that the study concentrated on banking sector without considering insurance subsector. Again, the study ignored the role of employee involvement culture on the relationship between the construct which current study will address.

2.2.2 Dynamic Thinking and Organizational Performance

Biswakarma and Bohora (2025) examined the relationship between dynamic capabilities and organizational performance, with **organizational resilience serving as a mediating variable** in the IT sector. The research is grounded in the dynamic capabilities framework, which emphasizes an organization's ability to sense, seize, and reconfigure resources in response to environmental changes. The study adopts a **cross-sectional survey method** where data was collected from employees and managers within IT firms, and the analysis was conducted using **Structural Equation Modelling (SEM)** to test both direct and indirect relationships among the constructs. The results indicate that **direct relationship between dynamic capabilities and organizational performance is weak or insignificant**. This suggests that dynamic capabilities do not directly translate into improved performance unless they are effectively transformed into resilience capabilities. Thus, caution must be exercised in generalizing the findings on the ground that the study did not incorporate other equally important subsectors such as insurance. Again, the study excluded moderating effect of employee involvement culture on the relationship between the variables which would have made more contributions. This indicate a wide gap current study would address.

Again, Zelenyte (2025) adopts a systematic literature review methodology to examine how dynamic capabilities influence organizational performance within the context of digital business transformation. The research synthesizes existing empirical and conceptual studies rather than collecting primary data. The systematic review approach involves identifying, evaluating, and integrating prior scholarly works on dynamic capabilities, digital transformation, and organizational performance. The study reveal that dynamic capabilities generally exhibit a positive relationship with organizational performance. The review highlights that firms leveraging dynamic capabilities are better positioned to adapt to technological changes, enhance operational efficiency, and sustain competitive advantage. However, the study also presents a mixed perspective rather than a purely linear positive relationship. It emphasizes that the impact of dynamic capabilities on performance is context-dependent, influenced by factors such as organizational culture. The study relied on extant literature without collecting empirical data which would have been analyzed using appropriate method on the platform of appropriate software. This reveled a wide gap which current study would fill.

Likewise, Akhtar, Awan, Naveed and Ismail (2018) examined the impact of systems thinking on organizational effectiveness within the banking sectors of Malaysia and Pakistan. In the study, dynamic thinking was considered as one of the key dimensions of systems thinking. The study adopted quantitative comparative research design using a cross-sectional survey

approach. It employed structured questionnaires to obtain data from employees and managers working in commercial banks using. The data was analyzed using SEM and regression analysis. Statistically, the results showed that dynamic thinking significantly influence organizational effectiveness in both country settings. Caution must be exercised in generalizing the findings of the study on the ground that it ignored other equally important sectors. Again, the study did not consider the role employee involvement culture would have played in the relationship between the variables. The study recommended conduct of similar study in other jurisdiction.

2.2.3 Understanding Mental Models and Organizational Performance

In a study conducted by Araújo, Gonçalves, Branco, and Braga (2017) examines the influence of mental models on organizational performance, drawing insights from neuroscience and psychosocial perspectives to explain behavioral dynamics within organizations. The authors adopt **empirical analytical approach based primarily on a systematic review and conceptual synthesis of interdisciplinary literature** from management studies, neuroscience, and psychology. The findings indicate that **mental models significantly influence organizational performance through their effect on learning, decision-making, and behavioral alignment within organizations**. The finding cannot be generalized on the ground that the variables were not independently verified empirically in a specific sector such as insurance. More so, the study ignore the moderating role of employee involvement culture which would made more contribution. This has established a huge gap which current study will address.

More so, Dias and De Toni (2018) examined the influence of mental models on organizational performance within firms operating in the metal mechanic sector. The study employed a **quantitative research design using a survey method**. Data were collected through structured questionnaire from **managers and employees in firms within the Brazilian metal mechanic industry**. The researchers analyzed the data using **correlation and regression analysis**. The results demonstrate that **mental models have a significant influence on organizational performance**. The findings could be judgmental given that the study concentrate on Brazilian metal mechanic industry without considering other equally important industries such as pension subsector. The study also ignore the moderating effect of other equally important variables such as employee involvement culture which may have strengthened the relationship. This indicates existence of a wide gap which current study will fill.

However, Zhao, Gao, Hao, and Ren (2023) examined how inconsistent mental models within organizations influence performance outcomes and how managerial interpretation and practice sets moderate this relationship. The study is grounded in cognitive and organizational learning theories, which emphasize that shared understanding among organizational members is essential for coordinated action and effective performance. The researchers employed a **survey method** where data was collected from **top management teams and organizational members across firms in China**. The data was analyzed using **hierarchical regression analysis and moderation analysis**. The findings indicate that **inconsistent mental models among organizational members have a significant negative effect on organizational performance**. When individuals within an organization interpret strategies, goals, and

environmental conditions differently, coordination problems arise, leading to inefficiencies, delayed decision-making, and reduced organizational effectiveness. These inconsistencies weaken the organization's ability to implement strategies and adapt to environmental changes.

Likewise, Akhtar, Awan, Naveed and Ismail (2018) investigated impact of systems thinking on organizational effectiveness within the banking sectors of Malaysia and Pakistan. The study emphasizes on core dimensions of systems thinking which including understanding mental models, shared vision, team learning, and systems logic. The study employed a quantitative comparative research design using a cross-sectional survey approach. Data were collected from employees and managers working in commercial banks using structured questionnaires. The data was analyzed using SEM and regression analysis. Empirically, the results indicate that understanding mental models does not have any effect on the organizational effectiveness in both country settings. The study did not consider other equally important variable such as employee involvement culture which would have moderated the relationship between the constructs. Moreover, the study recommended conduct of further study in other sectors.

2.2.4 Pattern Recognition and Organizational Performance

Akhtar, Awan, Naveed and Ismail (2018) examined a comparative study of the application of systems thinking in achieving organizational effectiveness in the banking sector of Malaysia and Pakistan. The study focused particularly on systems-thinking components such as mental models, shared vision, team learning, and pattern recognition. The researchers adopted a quantitative comparative research design using a cross-sectional survey method. Data was collected from three hundred and sixty eight (368) employees working in commercial banks in both countries through a structured questionnaire. The study utilized structural equation modeling (SEM) and regression analysis to test the relationships between constructs. The study revealed that pattern recognition as a component of systems thinking has a positive and significant relationship with organizational effectiveness. The result cannot be generalized on the ground that it focuses on banking industry only without considering other subsectors such as pension subsector. More so, the study did not incorporate employee involvement culture as a moderator which would have influenced organizational effectiveness. This exposes a wide gap which current study will address.

Other empirical studies reported **negative relationships** between pattern recognition and organizational performance. For example, Gavetti and Levinthal (2000) used computer simulations to examine the relationship between search processes that are forward-looking, based on actors' cognitive map of action-outcome linkages, and those that are backward-looking, or experience based. The result demonstrated that managers sometimes perceive patterns where none exist, leading to **illusory pattern recognition**, which can produce flawed strategic decisions and poor organizational outcomes. The study did not empirically examine the relationship between the constructs, rather if focuses forward-looking and backward-looking actions of managers. Therefore, caution must be exercised in generalizing the findings. Moreover, the study ignored that moderating role of employee involvement culture, and other constructs such as dynamic thinking and continuous learning which would have added more value. This establishes a huge gap which current study will fill.

2.2.5 Process Orientation and Organizational Performance

The study conducted by Akhtar, Awan, Naveed and Ismail (2018) examined how the application of systems thinking contributes to organizational effectiveness in the banking sectors of Malaysia and Pakistan. The study focused on key systems-thinking dimensions viz; process orientation, mental models, shared vision, team learning, and systems logic. The study adopted a quantitative comparative research design using a cross-sectional survey method where data was retrieved through structured questionnaires from 386 employees and managers of commercial banks in both countries. The result of data analyzed using Structural Equation Modeling (SEM) showed that process orientation has a significant and positive relationship with organizational effectiveness in both Malaysian and Pakistani banks. Although the findings confirm that **process orientation contributes positively to organizational effectiveness, but** caution must be exercised in generalizing the findings of the study given that it collected data from banking industry only, thereby excluding other equally important sectors such as pension subsector. Similarly, the study excluded the moderating effect of employee involvement culture on the relationship between the construct which would have made more contributions.

Skarzauskiene (2010) examined managing complex system through system thinking as catalyst for organization performance. Process orientation as one of the components of system thinking in the study. Multiple linear regression was used to test the hypothesis. The result revealed that a positive and significant relationship between process orientation and organizational performance with coefficient of $B = 0.37$ and $p = 0.00$. The research result may not be generalized to other sectors since the sample was limited only to national level. Moreover, the moderating effect of employee involvement culture on the relationship between the construct was not consider in the study, which leaves much to be desired. Thus, current study will address this gap.

Other empirical studies have also confirmed inconsistent relationship between process orientation and organizational performance. For example, a landmark research conducted by Tang, Pee, and Iijima (2013) on effect of business process orientation on organizational performance demonstrates that not all dimensions of business process orientation positively influence organizational outcomes. Their survey of Japanese organizations revealed that the **process view dimension of BPO did not significantly affect innovation performance**, suggesting that process orientation alone may not improve organizational performance without supporting integration mechanisms. This study did not consider the moderating effect of employee involvement culture on the relationship between the constructs. Moreover, the study concentrated on organizations in Japan.

Another empirical study by Harjanto and Mahendrawathi (2023) examined business process orientation practices. The study found that several BPO practices do not directly influence organizational performance. The study reported that some process orientation practices such as supplier integration and organizational culture failed to demonstrate a direct effect on performance, indicating that the relationship is often mediated by other organizational capabilities. Nevertheless, the study did not consider the moderating effect of employee involvement culture which would have made more contributions. This exposes a huge gap which current study would fill.

2.2.6 Systems Logic and Organizational Performance

The study conducted by Akhtar, Awan, Naveed and Ismail (2018) examined the application of systems thinking in achieving organizational effectiveness in the banking sectors of Malaysia and Pakistan. In this study, system logic was considered as one of the several systems-thinking dimensions. Quantitative comparative research design using a cross-sectional survey method was adopted where data was collected through structured questionnaires administered to employees and managers in commercial banks in both countries. The result of data analyzed using Structural Equation Modeling (SEM) and regression analysis revealed that systems logic has insignificant relationship with organizational effectiveness at a point where (β 0.061, $p > 0.05$) in both Malaysian and Pakistani banks. The findings are judgmental on the ground that other equally important industries such as the insurance were not considered. Again, the study ignored the moderating role employee employment culture would have played to influence the relationship between the constructs. This establishes a huge gap which this study will address.

In another landmark study, Skarzauskiene (2010) examined managing complex system through system thinking as catalyst for organization performance. The study considered systems logic as one of the major components of system thinking. The study employed multiple linear regression to test the hypothesis and the result showed that systems logic significantly influence organizational performance ($B = 0.22$, $p = 0.00$). The research result lack generalizability, given that the sample was limited only to national level, therefore, it is not possible to implement the findings in another sector. Besides, the study did not consider the moderating effect of employee involvement culture on the relationship between the construct which current study would address.

2.2.7 Moderating Role of Employee Involvement Culture (EIC)

Organizational culture establishes operational ecosystem in which every employee tries to achieve the goal of the organization (Narayana, 2017). It is a system of values, beliefs, behaviours and idea instituted by organizations to guide employees on the operations of the organization. This indicates that understanding organizational culture is significant for the employees, stakeholders and organizations at large (Djangone & El-Gayar, 2021). This is because it is needed to facilitate organizational efficiency, effectiveness, responsiveness and equity (Norman, Paramansyah & Abdan, 2022).

Denison (1996) argued that cultural dimensions work at individual and organizational level in organizations. This model suggested cultural dimensions to consistency, adaptability, involvement and mission. Studies have revealed that cultural dimensions influence organizational performance and have been conceptualized and modelled as moderator of organizational performance (Xu, Li, Yan, Cui, Liu & Zheng, 2024). Nonetheless, the researcher is not aware of any study that used employee involvement culture as a moderator on the relationship between systems thinking and organizational performance. This suggests the need to investigate extent to which organizational culture dimensions such as employee involvement culture may moderate the relationship between systems thinking and organizational performance.

Again, organizations must strive to facilitate involvement of their employees in system thinking within the organization. This is because employee involvement culture influences organizational performance (Ismail, Imran & Al Hosni, 2021, Faeq, 2022).

This study introduces employee involvement culture as a moderator on the relationship between systems thinking and organizational performance of PFAs in Nigeria on the ground that PFAs may facilitate involvement of their employees in systems thinking through continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic. Thus, current study suggests that employee involvement culture may moderate the relationship between systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic) and organizational performance of PFAs in Nigeria.

2.3 Underpinning Theory: System Theory

System theory propounded by Bertalanffy (1968) conceptualizes organizations as complex, adaptive, and open systems composed of interdependent subsystems that interact continuously with one another and with the external environment. The theory emphasizes that organizational effectiveness is not merely a function of individual components, but rather the outcome of the quality of interactions, coordination, and feedback among these components (Katz & Kahn, 1978).

Systems thinking is a critical managerial capability that enables decision-makers to understand and manage complex interrelationships within an organization. It shifts attention from linear cause-effect reasoning to a more holistic appreciation of patterns, feedback loops, and systemic structures (Senge, 2006; Sterman, 2000). In the context of PFAs, it is assumed that systems thinking will allow employees to continue learning, facilitate dynamic thinking, understand mental models, pattern recognition, process orientation, and systems logic, which invariably, may enhance organizational performance of the PFAs in Nigeria. Moreover, recent empirical studies suggest that systems thinking enhances organizational performance by promoting integration, coordination, and strategic alignment (Siriram & Plessis, 2024; Sumairah & Zainon, 2024). For instance, studies on continuous learning demonstrates that systems-oriented organizations are better able to optimize processes and achieve superior performance outcomes (Garcia & Martinez, 2024).

Systems theory posits that organizations that effectively adopt systems thinking are more likely to achieve superior organizational performance on the ground that they can better coordinate activities, anticipate unintended consequences, and adapt to environmental changes (Bertalanffy, 1968; Katz & Kahn, 1978). Nevertheless, systems theory also underscores that the effectiveness of any system depends not only on its structural configuration but also on the quality of interactions among its components. Thus, there is the need for organizational culture, particularly employee involvement culture. Employee involvement culture refers to the extent to which employees are empowered to participate in decision-making, contribute ideas, and engage in problem-solving processes (Denison, 1990). It reflects a work environment that values collaboration, open communication, and shared responsibility.

In the Nigerian pension industry, PFAs operate within a highly regulated system overseen by the National Pension Commission. This environment requires continuous coordination among investment management, compliance, customer service, and risk management functions.

Systems thinking is therefore critical for ensuring that decisions in one area do not negatively affect other subsystems. Despite its relevance, empirical research on systems thinking within Nigerian PFAs remains limited, creating a gap that this study seeks to address.

In summary, this theoretical framework suggests that systems theory along with the constructs of systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic), employee involvement culture, and organizational performance may provide a comprehensive explanation of how PFAs can achieve superior performance. Systems thinking proxies namely; continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic may enhance organizational performance through moderating role of employee involvement culture. This proposed framework offers a strong theoretical basis for empirically examining the moderating effect of employee involvement culture on the relationship between systems thinking and organizational performance in the Nigerian pension industry.

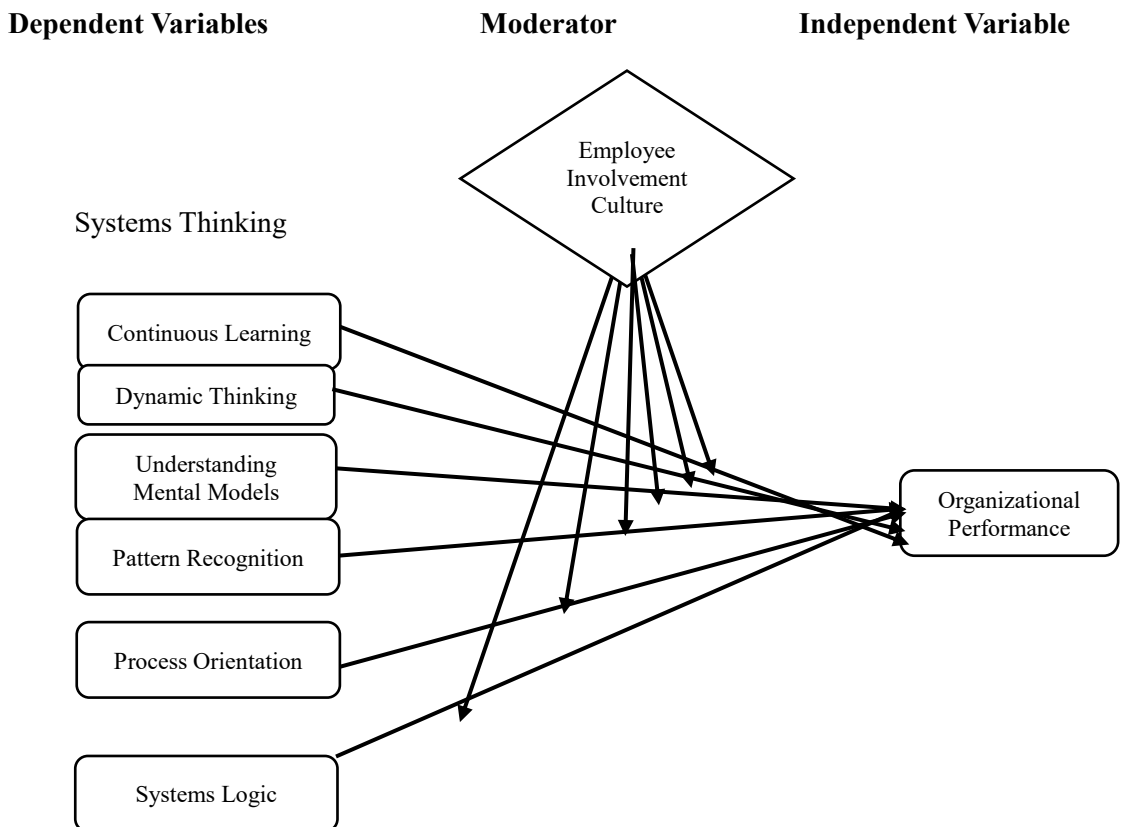


Figure 2.1: Conceptual Framework of the Study

3.0 Methodology

This study employed a desk review technique where comprehensive analysis of existing literature and empirical studies on systems thinking (continuous learning, dynamic thinking, understanding mental models, pattern recognition, process orientation and systems logic), employee involvement culture, and organizational performance was conducted. The study collected data from scholarly articles, academic journals, organizational reports and books to obtain insights into the moderating effect of employee involvement culture on the relationship between systems thinking and organizational performance.

4.0 Conclusion

Literature have revealed that the relationship between systems thinking and organizational performance was inconsistent depending on the measures of systems thinking employed in the study. Organizational performance leads to attainment of goals and objectives of organizations. The success of organizations depends largely on involvement of employees in systems thinking process. Therefore, this paper seeks to contribute to development of theory on systems thinking, employee involvement culture and organizational performance. The paper suggests empirical investigation of systems thinking, employee involvement culture and organizational performance in pension industry in Nigeria. It proposes investigation of direct effect of system thinking on organizational performance through moderating effect of employee involvement culture. This paper will, thus, fill literature gap through provision of empirical data on relationship between systems thinking, employee involvement culture and organizational performance within the context of pension subsector in Nigeria. This study will practically provide background for enhancing effective operations of pension subsector in Nigeria. The conceptual framework of this study will guide relevant stakeholders in pension subsector in Nigeria to understand the systems thinking component that facilitates performance of organizations and contribution of employee involvement culture if adopted in pension subsector. In this regard, it is suggested that, in the future, an empirical investigation of the moderating effect of employee involvement culture in the interaction between systems thinking and organizational performance should be conducted.

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