

Vertical Stratification on Organizational Competitive Advantage among Staff of Selected Pharmaceutical Companies in the Federal Capital Territory (FCT) Abuja, Nigeria

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Abstract

Original Research Article

This study investigates the influence of vertical stratification on organizational competitive advantage among staff of selected pharmaceutical companies in the Federal Capital Territory (FCT) Abuja, Nigeria. Anchored in the Resource-Based View (RBV) theory (Barney, 1991), the study employs a descriptive survey research design using primary data from 242 respondents across Emzor Pharmaceutical Industries Limited and New Age Pharmaceutical Industry Limited. Vertical stratification is conceptualized along four dimensions: structural layering, authority gradient, resource allocation disparity, and opportunity differential, while organizational competitive advantage is operationalized along four dimensions: cost leadership, product differentiation, operational efficiency, and market responsiveness. Data were collected through a structured questionnaire and analyzed using descriptive statistics (frequencies, percentages, means, standard deviations) and inferential statistics (Pearson correlation, simple linear regression, ANOVA) via SPSS v26.0. Findings reveal that vertical stratification exists at a moderate to high extent (Mean = 3.42, SD = 1.15), with structural layering (Mean = 3.68) and authority gradient (Mean = 3.55) most prevalent. Organizational competitive advantage registers at a moderate level (Grand Mean = 2.98, SD = 1.18), with operational efficiency most developed (Mean = 3.15) and market responsiveness least developed (Mean = 2.72). Regression analysis confirms a statistically significant negative relationship ($\beta = -0.512$, $p < 0.001$, $R^2 = 0.262$), indicating that vertical stratification explains 26.2% of the variance in organizational competitive advantage and substantially impedes performance. The study concludes that excessive vertical stratification undermines competitive advantage in Nigerian pharmaceutical companies by restricting knowledge flow, limiting innovation capacity, and creating structural rigidities. Recommendations include flattening organizational hierarchies, implementing cross-functional team structures, and developing inclusive resource allocation systems to enhance competitive advantage in pharmaceutical firms.

Keywords: Vertical stratification; organizational competitive advantage; structural layering; authority gradient.

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Introduction

The contemporary global pharmaceutical industry is increasingly characterized by the imperative of competitive positioning, compelling pharmaceutical organizations across

all jurisdictions to integrate strategic management principles into their operational frameworks (Barney, 1991). The pharmaceutical sector constitutes a critical component of healthcare systems worldwide, with the Nigerian

pharmaceutical market valued at approximately ₦500 billion and employing thousands of workers across manufacturing, distribution, and retail operations (BusinessDay, 2025; NAFDAC, 2024). Despite this significant economic footprint, Nigerian pharmaceutical companies remain largely underexplored in the context of organizational structure and competitive advantage, particularly in relation to how vertical stratification influences the capacity of firms to achieve and sustain market leadership (Barney, 2001). The concept of vertical stratification refers to the hierarchical arrangement of organizational levels characterized by distinct differences in authority, responsibility, resource access, and decision-making power between upper management, middle management, and operational staff (Perreira *et al.*, 2018). Unlike horizontally integrated structures that emphasize collaboration and knowledge sharing across functions, vertically stratified organizations feature pronounced power gradients that shape information flow, innovation capacity, and adaptive responsiveness (Barney, 1991). In high stratification contexts, strategic decisions are concentrated at apex levels while operational execution is delegated downward, potentially creating misalignment between market demands and organizational capabilities (Barney, 2007).

Organizational competitive advantage, as conceptualized within the Resource-Based View (RBV) framework originally articulated by Barney (1991) and subsequently refined through the VRIO model (Barney, 2007), represents the ability of a firm to implement strategies that create value, rarity, imperfect imitability, and organizational embeddedness in its resources and capabilities. In the context of pharmaceutical companies, competitive advantage specifically encompasses the capacity to develop and market differentiated products, achieve cost efficiencies in production, maintain operational excellence in quality assurance, and respond rapidly to regulatory and market changes (Barney, 1991). The relationship between organizational structure and competitive advantage has been extensively documented in strategic management literature, yet the specific application of this relationship to vertical

stratification in Nigerian pharmaceutical companies within the Federal Capital Territory remains significantly under-researched (Barney, 2001). The Federal Capital Territory (FCT) Abuja, Nigeria's administrative and political capital, presents a compelling context for examining vertical stratification and organizational competitive advantage in pharmaceutical companies. The FCT hosts Emzor Pharmaceutical Industries Limited, one of Nigeria's leading indigenous pharmaceutical manufacturers with a 65-hectare production facility at Sagamu and operations spanning multiple states, including a significant presence in Abuja for distribution and administrative functions (Emzor, 2020; BusinessDay, 2025). Emzor manufactures over 16 categories of products including vitamins, antibiotics, cardiovascular medications, and antihistamines in ISO and NAFDAC-approved facilities, and is currently developing a \$23 million active pharmaceutical ingredient (API) plant the first of its kind in sub-Saharan Africa aimed at reducing Nigeria's dependence on imported raw materials (BusinessDay, 2025). The company employs a substantial workforce across its manufacturing, research and development, distribution, and administrative operations. New Age Pharmaceutical Industry Limited, located at Plot 231/234 Kuje Road, Gwagwalada, Abuja, represents another significant pharmaceutical manufacturer in the FCT, producing oral solid and oral liquid dosage forms (NAFDAC, 2024). The company has undergone NAFDAC GMP re-assessment and maintains operational standards consistent with regulatory requirements for pharmaceutical manufacturing in Nigeria. Both companies operate within a competitive landscape characterized by import dependence (over 90% of raw materials sourced from China and India), regulatory oversight by NAFDAC, and intense competition from both local manufacturers and imported finished products (BusinessDay, 2025).

The significance of this study lies in its potential to bridge the gap between strategic management theory and pharmaceutical practice in a developing economy context. While existing literature has predominantly focused on large multinational pharmaceutical corporations in

developed economies (Barney, 1991; 2001), the unique structural, regulatory, and competitive constraints facing Nigerian pharmaceutical companies demand context-specific empirical investigation. Furthermore, as the global community intensifies its focus on Sustainable Development Goal 3 (good health and wellbeing) and local pharmaceutical production, understanding how organizational structure influences competitive advantage becomes critical for industry sustainability and national health security (UNESCO, 2024). This study, therefore, seeks to examine the extent to which vertical stratification influences organizational competitive advantage among staff of selected pharmaceutical companies in FCT Abuja, Nigeria, thereby contributing to both academic discourse and practical management interventions in the region.

Problem Statement

Despite the growing recognition of organizational competitive advantage as a strategic imperative for pharmaceutical industry sustainability, empirical evidence regarding the specific mechanisms through which Nigerian pharmaceutical companies can build and sustain market leadership remains fragmented and inconclusive (Barney, 2001). Nigerian pharmaceutical firms, which operate within a market valued at approximately ₦500 billion yet face import dependence exceeding 90% for raw materials, confront peculiar challenges in achieving competitive positioning due to structural rigidities, limited innovation capacity, and inadequate integration of organizational design factors into strategic planning (BusinessDay, 2025; NAFDAC, 2024). The problem is particularly acute in companies such as Emzor Pharmaceutical Industries Limited and New Age Pharmaceutical Industry Limited in FCT Abuja, where organizational operations are characterized by pronounced vertical hierarchies, centralized decision-making, and a predominant focus on production compliance rather than strategic adaptability.

The concept of vertical stratification defined as the hierarchical arrangement of organizational levels with distinct authority, resource access,

and decision-making differentials has received limited scholarly attention in the Nigerian pharmaceutical context. While studies in developed economies have demonstrated that organizational structure significantly influences competitive advantage and firm performance (Barney, 1991; 2007), the applicability of these findings to vertically stratified Nigerian pharmaceutical companies remains questionable. Existing research on competitive advantage in Nigeria has predominantly examined isolated factors such as technology adoption, marketing strategies, and financial management, often neglecting the structural processes through which vertical stratification creates or inhibits the resource configurations that generate competitive advantage (Barney, 2001). For instance, BusinessDay (2025) reported on Emzor's strategic investments in API production and diversification into vaccines, cephalosporins, and infusion products, but did not explicitly examine how organizational structure influences the implementation of these strategic initiatives.

Moreover, the measurement and conceptualization of vertical stratification in pharmaceutical contexts lack standardization, particularly for developing economy applications. While Barney's (1991) VRIO framework provides the foundational logic for understanding competitive advantage as value, rarity, imperfect imitability, and organizational embeddedness, the specific manifestations of vertical stratification in Nigerian pharmaceutical companies encompassing structural layering between production and management, authority gradients in decision-making, resource allocation disparities in R&D investment, and opportunity differentials in career advancement require empirical validation within the FCT Abuja context (Barney, 2007). The absence of such validation creates a significant knowledge gap that limits the ability of pharmaceutical managers to design effective organizational structures for competitive positioning.

The competitive challenges confronting Nigerian pharmaceutical companies further exacerbate this problem. With the sector experiencing rapid regulatory evolution, technological advancement in manufacturing processes, and shifting

government policies toward local production, companies in FCT Abuja must navigate complex NAFDAC compliance requirements, supply chain vulnerabilities, and price competition from imported generics while attempting to maintain product quality and market share (BusinessDay, 2025). These competitive pressures demand organizational capabilities that are agile, innovative, and responsive qualities that may be constrained by excessive vertical stratification. However, the extent to which current vertical stratification practices within these pharmaceutical companies facilitate or impede the development of such competitive capabilities remains unknown. This study, therefore, addresses the critical problem of understanding how vertical stratification influences organizational competitive advantage among staff of selected pharmaceutical companies in FCT Abuja, with the aim of generating evidence-based insights for enhancing strategic management in Nigeria's pharmaceutical sector.

Study's Objectives

The overall objective of this study is to investigate the influence of vertical stratification on organizational competitive advantage among staff of selected pharmaceutical companies in FCT Abuja, Nigeria.

Research Hypothesis

Drawing from the specific objective, the following null hypothesis is formulated for empirical testing:

H₀: Vertical stratification does not have a significant influence on organizational competitive advantage among employees of selected pharmaceutical companies in FCT Abuja, Nigeria.

Literature Review (Conceptual Review)

Vertical Stratification

Vertical stratification represents an organizational structural dimension that describes the hierarchical arrangement of levels characterized by distinct differences in authority,

responsibility, resource access, and decision-making power (Perreira *et al.*, 2018). Unlike flat or horizontally integrated structures that emphasize collaboration, knowledge sharing, and decentralized decision-making across functions, vertically stratified organizations feature pronounced power gradients where strategic cognition is concentrated at apex levels while operational execution is delegated downward (Barney, 1991). This conceptualization aligns with the broader understanding of organizational design as a system of roles, relationships, and reporting lines that shape firm capabilities, but adds the critical dimension of vertical distance as the organizing principle for resource configuration (Barney, 2007).

The theoretical foundations of vertical stratification can be traced to the Resource-Based View (RBV) of the firm, which posits that competitive advantage derives from valuable, rare, imperfectly imitable, and organizationally embedded resources (Barney, 1991). In this framework, organizational structure itself constitutes a strategic resource that can either facilitate or impede the development and deployment of other resources. Vertical stratification influences competitive advantage through multiple operational dimensions: (1) structural layering the number of hierarchical levels between top management and operational staff, creating information filters and decision delays; (2) authority gradient the concentration of decision-making power at upper levels with limited delegation to middle and operational management; (3) resource allocation disparity unequal distribution of financial, technological, and human resources across organizational levels; and (4) opportunity differential varied access to training, promotion, and participation in strategic initiatives based on hierarchical position (Perreira *et al.*, 2018).

Empirical evidence on vertical stratification in pharmaceutical contexts remains emerging. In the broader organizational literature, Perreira *et al.* (2018) identified a "Globally Moderately Committed with a Hierarchical-Organizational Orientation" profile among French firefighters, characterized by high organizational commitment but lower supervisor and coworker

commitment, with surprisingly poor health and job satisfaction outcomes. This study demonstrated that hierarchical orientations can generate lopsided organizational outcomes. In the Nigerian pharmaceutical context, BusinessDay (2025) reported that Emzor Pharmaceutical Industries has invested significantly in API production and diversification, yet the organizational structure enabling these strategic shifts has not been systematically examined. The company's 65-hectare facility at Sagamu and planned expansion into vaccines and cephalosporins suggest growing organizational complexity that may exacerbate or mitigate vertical stratification effects. For Nigerian pharmaceutical companies in FCT Abuja, vertical stratification may create particular tensions. Emzor, as a leading indigenous manufacturer with pan-African distribution ambitions, operates with significant organizational complexity spanning manufacturing, R&D, distribution, and administrative functions. New Age Pharmaceutical, as a specialized manufacturer of oral solid and liquid dosage forms, maintains a more focused operational scope. Both companies must comply with NAFDAC GMP requirements that demand rigorous documentation, quality control, and traceability processes that may be facilitated or impeded by vertical structural arrangements. The concentration of technical expertise at management levels while operational staff execute standardized procedures may limit the innovation capacity necessary for competitive differentiation in a market dominated by imported generics.

Organizational Competitive Advantage

Organizational competitive advantage refers to the ability of a firm to implement strategies that create value for customers while positioning the firm favorably relative to competitors (Barney, 1991). This construct contrasts with competitive parity, which denotes performance equivalent to industry averages, and competitive disadvantage, which reflects below-average performance. In pharmaceutical contexts, where regulatory compliance, product quality, and innovation speed are critical success factors, competitive advantage becomes not merely desirable but

essential for organizational survival and growth (Barney, 2007). The conceptualization of competitive advantage draws heavily from Barney's (1991) VRIO framework, which identifies four conditions for sustained competitive advantage: Value resources must enable the firm to exploit opportunities or neutralize threats in the environment. For pharmaceutical companies, valuable resources include manufacturing capabilities that meet NAFDAC standards, distribution networks that ensure product availability, and research competencies that generate new formulations (Barney, 1991). Rarity resources must be scarce relative to demand among current and potential competitors. In the Nigerian pharmaceutical market, rarity may derive from specialized manufacturing capabilities (such as Emzor's planned API production), exclusive distribution agreements, or proprietary formulations that competitors cannot easily replicate (Barney, 2007). Imperfect imitability resources must be difficult for competitors to acquire, develop, or substitute. Pharmaceutical resources that are path-dependent (developed over time through cumulative experience), causally ambiguous (difficult to trace the sources of advantage), or socially complex (embedded in organizational culture and relationships) are typically imperfectly imitable (Barney, 1991). Organizational embeddedness the firm must be organized to exploit the potential of its valuable, rare, and imperfectly imitable resources. This condition emphasizes that structure, processes, and culture must align to capture the full competitive potential of resources (Barney, 2007).

Recent scholarship has extended the VRIO framework to dynamic capabilities and organizational adaptation. Barney (2001) acknowledged that the traditional RBV is limited in explaining competitive advantage in rapidly changing environments, leading to the integration of dynamic capabilities perspectives that emphasize learning, skill acquisition, and resource reconfiguration over time. In the Nigerian pharmaceutical context, where regulatory changes, technological advancements, and market shifts create continuous demands for adaptation, dynamic

capabilities are particularly relevant. The present study operationalizes organizational competitive advantage along four dimensions: (1) cost leadership the ability to achieve lower production and distribution costs than competitors; (2) product differentiation the capacity to develop and market products with unique attributes valued by customers; (3) operational efficiency the effectiveness of production processes in meeting quality, volume, and timeliness standards; and (4) market responsiveness the speed and accuracy of organizational responses to market changes, regulatory shifts, and competitive moves (Barney, 1991).

Vertical Stratification and Organizational Competitive Advantage: The Conceptual Link

The conceptual linkage between vertical stratification and organizational competitive advantage rests on the premise that excessive hierarchical differentiation creates structural barriers to the resource configurations that generate competitive advantage. When decision-making is concentrated at organizational apexes without broad consultation, strategic choices may fail to reflect operational realities and market intelligence possessed by frontline staff, leading to misaligned resource investments and implementation gaps (Barney, 1991). In vertically stratified pharmaceutical companies, senior management may formulate diversification strategies (such as Emzor's API plant investment) without adequate input from production, quality assurance, and regulatory affairs staff who possess grounded knowledge of implementation challenges. The mechanisms through which vertical stratification undermines competitive advantage include information distortion, innovation suppression, responsiveness delays, and capability fragmentation (Barney, 2007). Information distortion occurs when multiple hierarchical layers filter market and operational data before reaching decision-makers, creating strategic blind spots. Innovation suppression results when lower-level employees with technical expertise and market insights lack channels to contribute ideas for product development or process

improvement. Responsiveness delays emerge when approval chains spanning multiple levels slow decision-making in fast-moving markets. Capability fragmentation occurs when specialized knowledge is trapped in silos rather than integrated across functions to create synergistic advantages (Perreira *et al.*, 2018).

Furthermore, vertical stratification impedes the development of dynamic capabilities the capacity to sense opportunities, seize them through resource reconfiguration, and transform organizational processes in response to environmental changes. As Barney (2001) noted, sustained competitive advantage in dynamic environments requires organizational learning and adaptation across all levels. In vertically stratified companies, learning is restricted to top management while operational levels execute without understanding, limiting the distributed cognition necessary for adaptive competitiveness. The contemporary pharmaceutical landscape is characterized by precisely such dynamism, with evolving NAFDAC regulations, emerging digital health technologies, and shifting government procurement policies creating continuous demands for organizational adaptability. In the Nigerian pharmaceutical context, the conceptual link between vertical stratification and competitive advantage assumes particular significance due to structural and competitive factors. With over 90% raw material import dependence, Nigerian pharmaceutical companies must navigate foreign exchange volatility, supply chain disruptions, and price competition from Indian and Chinese generics (BusinessDay, 2025). These competitive pressures demand organizational capabilities for cost efficiency, quality assurance, and rapid product development that may be constrained by excessive vertical stratification. Additionally, the planned API production by Emzor represents a strategic shift toward vertical integration that may alter the company's structural configuration and competitive positioning. However, the extent to which this conceptual linkage holds empirically in the specific context of FCT Abuja pharmaceutical companies' remains to be established, providing the primary motivation for this study.

Theoretical Framework

This study is anchored in the Resource-Based View (RBV) of the Firm, originally developed by Jay Barney (1991) and contemporaneously advanced through the VRIO framework (Barney, 2007). The Resource-Based View posits that firms achieve competitive advantage by acquiring, developing, and deploying resources and capabilities that are valuable, rare, imperfectly imitable, and organizationally embedded (Barney, 1991). The theory conceptualizes the firm as a bundle of resources and capabilities that, when strategically managed, generate sustained above-normal returns relative to competitors (Barney, 2001). Barney's (1991) seminal contribution identified four conditions that resources must satisfy to generate sustained competitive advantage: value, rarity, imperfect imitability, and lack of substitutability (later refined to organizational embeddedness in the VRIO model). This framework is critical for understanding vertical stratification because organizational structure itself constitutes a resource that influences whether other resources fulfill these conditions. A vertically stratified structure may prevent the firm from fully exploiting valuable resources by restricting information flow, limiting participative decision-making, and creating gaps between strategic intent and operational execution (Barney, 2007).

The VRIO model's emphasis on organizational embeddedness is particularly relevant to vertical stratification. Barney (2007) argued that possessing valuable, rare, and imperfectly imitable resources is insufficient unless the firm is organized to exploit them effectively. Organizational embeddedness requires that structure, processes, and culture align to capture the full competitive potential of resources. In vertically stratified pharmaceutical companies, the structure may itself become a source of competitive disadvantage by preventing the integration of technical knowledge, market intelligence, and operational expertise necessary for innovation and responsiveness (Barney, 1991). The application of RBV to vertical stratification and competitive advantage in Nigerian pharmaceutical companies requires consideration of context-specific factors. Unlike

large multinational pharmaceutical corporations with mature matrix structures and global knowledge management systems, Nigerian pharmaceutical firms operate with limited resources, nascent R&D capabilities, and regulatory environments that demand rapid adaptation (BusinessDay, 2025). In such contexts, vertical stratification may be particularly damaging because the firm cannot afford the information losses, innovation delays, and responsiveness gaps that hierarchy creates. The RBV suggests that even moderate vertical stratification may yield significant competitive disadvantages when organizational resources are scarce and environmental dynamism is high (Barney, 2001).

Furthermore, RBV provides the rationale for examining organizational competitive advantage as a multidimensional construct. Following Barney's (1991) original framework and subsequent extensions, this study conceptualizes competitive advantage along four dimensions: cost leadership, product differentiation, operational efficiency, and market responsiveness. This multidimensional conceptualization aligns with the theory's recognition that competitive advantage manifests across multiple performance domains and that different resource configurations may generate advantages in different areas (Barney, 2007). The theoretical framework also informs the hypothesized relationship between vertical stratification and organizational competitive advantage. Based on RBV, it is expected that higher vertical stratification will be associated with lower competitive advantage because hierarchical barriers impede the information sharing, participative decision-making, cross-functional collaboration, and distributed learning necessary for resource optimization. This expectation derives from the theory's core proposition that competitive advantage requires effective organizational exploitation of valuable resources, and when structural barriers prevent such exploitation, advantage suffers (Barney, 1991; 2007). The empirical testing of this hypothesis in the Nigerian pharmaceutical context will contribute to extending RBV's applicability to organizational design in developing economy manufacturing firms.

Empirical Review

This section reviews eight empirical studies that have examined relationships between organizational structure, vertical stratification, hierarchical differentiation, competitive advantage, and related outcomes in organizational and pharmaceutical contexts.

Barney (1991) laid the foundational framework for understanding how firm resources generate sustained competitive advantage. The study introduced the VRIS framework (later refined to VRIO) and established that competitive advantage derives from resources that are valuable, rare, imperfectly imitable, and non-substitutable. Barney demonstrated that organizational structure plays a critical role in determining whether resources fulfill these conditions, arguing that poor organizational policies and procedures may weaken a resource's competitive potential. The study's contribution lies in its systematic articulation of the resource-based logic and its recognition that organizational design is integral to competitive advantage. For the present study, Barney's framework provides the theoretical lens for examining how vertical stratification as an organizational design feature impedes or facilitates the development of competitive advantage in pharmaceutical contexts.

Perreira *et al.* (2018) used a person-centered approach to investigate commitment profiles among 468 French firefighters, considering both global commitments to work life and specific commitment to organization, supervisor, coworkers, occupation, work, and career. The study identified six commitment profiles, including a "Globally Moderately Committed with a Hierarchical-Organizational Orientation" profile characterized by high organizational commitment but lower supervisor and coworker commitment. Surprisingly, this profile showed some of the worst outcomes in terms of perceived health, work efficiency, and job satisfaction. The study found that authentic leadership was associated with membership in profiles displaying higher global commitment. The findings are relevant because they demonstrate that hierarchical-organizational orientations may be dysfunctional when not accompanied by social commitment to

supervisors and coworkers. For the present study, this suggests that vertical stratification in pharmaceutical companies may generate lopsided organizational outcomes with negative competitive implications.

Henderson and Cockburn (1994) examined firm effects in pharmaceutical research and development, exploring how organizational capabilities influence research productivity and competitive positioning. The study found that firm-specific capabilities, particularly integrative capabilities that span functional boundaries, significantly influenced research output and patent generation. The research demonstrated that pharmaceutical firms with flatter, more integrative structures outperformed those with rigid hierarchical divisions between research, development, and commercialization functions. The study's contribution lies in its empirical validation of the RBV in pharmaceutical contexts and its demonstration that organizational structure mediates the relationship between technical resources and competitive outcomes. For the present study, Henderson and Cockburn's findings suggest that vertical stratification in Nigerian pharmaceutical companies may impede the integrative capabilities necessary for product development and market responsiveness.

Makadok (2001) synthesized the resource-based view and dynamic-capability perspectives, distinguishing between "resource-picking" theories (focused on acquiring valuable resources) and "capability-building" theories (focused on developing organizational processes to exploit resources). The study argued that sustained competitive advantage requires both picking the right resources and building the organizational capabilities to deploy them effectively. Makadok demonstrated that organizational structure and processes are critical capability-building mechanisms, with hierarchical rigidities impeding the learning and adaptation necessary for dynamic capability development. The findings are relevant to the present study because they suggest that vertical stratification may undermine competitive advantage not only by restricting current resource exploitation but also by preventing the development of future adaptive capabilities. The

study's theoretical synthesis enhances understanding of how structure influences competitive dynamics over time.

Hansen and Wernerfelt (1989) examined the relative importance of economic and organizational factors in determining firm performance, using a sample of large U.S. corporations. The study found that organizational factors including structure, culture, and human resource practices explained approximately twice as much variance in firm performance as economic factors such as industry structure and market position. This finding challenged the prevailing industry-structure perspective and supported the resource-based view's emphasis on internal organizational characteristics. The study demonstrated that organizational structure is not merely a contextual variable but an active determinant of competitive outcomes. For the present study, Hansen and Wernerfelt's findings validate the examination of vertical stratification as a predictor of competitive advantage and suggest that structural factors may outweigh market conditions in explaining pharmaceutical firm performance.

Idris and Momani (2023) investigated the moderating role of power distance on the relationship between employee participation and outcome variables including organizational commitment, job satisfaction, perception of justice, and readiness to accept job responsibilities. Using moderated multiple regression analysis on data from 153 employees, the study found that power distance significantly moderated the participation-commitment relationship ($\beta = 0.32$, $p < 0.05$). In high power distance conditions, the positive effect of participation on commitment was weakened, suggesting that hierarchical cultures inhibit the commitment-building potential of participative management practices. The study also found that power distance moderated the relationship between participation and job satisfaction ($\beta = 0.32$, $p < 0.001$) and perception of justice ($\beta = 0.16$, $p < 0.05$). The findings are relevant because they directly demonstrate how vertical stratification as reflected in power distance interferes with the exchange processes that generate organizational outcomes critical for

competitive advantage.

BusinessDay (2025) reported on Emzor Pharmaceutical Industries Limited's strategic investments and operational challenges, including the delayed completion of its \$23 million API plant due to fiscal and monetary pressures. The report detailed Emzor's diversification into vaccines, cephalosporins, beta-lactams, and infusion products, as well as its deployment of fiscal measures to drive down production costs. The report highlighted that Emzor has adopted innovative strategies to address market failures and supply chain inefficiencies, including the development of approximately seven antimalarial brands from its mini-API R&D laboratory. While focused on strategic developments rather than structure, the report's identification of organizational complexity and the need for innovation in Nigerian pharmaceuticals is relevant to understanding how vertical stratification may impede or facilitate such strategic initiatives. The report also noted regulatory oversight challenges and the lack of precedent for API licensing in Nigeria, underscoring the need for organizational adaptability.

Pinho *et al.* (2024) investigated how human resource management practices influence organizational commitment profiles among Brazilian employees, using a person-centered approach to identify distinct commitment configurations. Analyzing data from 487 workers across multiple sectors, the study identified four commitment profiles: highly committed, affectively committed, continuance-normatively committed, and weakly committed. The highly committed profile (high across all three dimensions) was associated with comprehensive HRM practices including training, participation, and equitable rewards. Critically, the study found that hierarchical HRM practices those emphasizing control, standardization, and top-down decision-making were associated with the continuance-normatively committed profile, characterized by obligation-driven retention without emotional attachment. The Brazilian context, with high power distance and hierarchical organizational traditions similar to Nigeria, enhances the study's relevance. The findings suggest that vertical

stratification in Nigerian pharmaceutical companies may generate similar lopsided commitment profiles with implications for innovation, productivity, and competitive positioning.

Gap in Knowledge

While existing studies confirm that organizational structure significantly influences competitive advantage and firm performance (Barney, 1991; Hansen & Wernerfelt, 1989; Henderson & Cockburn, 1994), four critical gaps persist. First, competitive advantage research treats organizational structure as background context rather than an active antecedent that shapes resource configurations and capability development. Second, vertical stratification in pharmaceutical contexts encompassing structural layering, authority gradient, resource allocation disparity, and opportunity differential remains unoperationalized as a predictor of multidimensional competitive advantage in developing economy research. Third, research overwhelmingly focuses on multinational pharmaceutical corporations in developed economies, neglecting Nigerian pharmaceutical companies where regulatory complexity, import dependence, and nascent R&D capabilities alter structural mechanisms. Fourth, the Resource-Based View lacks empirical extension to vertical stratification and competitive advantage in African pharmaceutical manufacturing contexts. This study addresses these gaps by examining vertical stratification's influence on cost leadership, product differentiation, operational efficiency, and market responsiveness among staff of Emzor Pharmaceutical Industries Limited and New Age Pharmaceutical Industry Limited in FCT Abuja.

Methodology

This study employed a descriptive survey research design to examine vertical stratification's influence on organizational competitive advantage among employees of selected pharmaceutical companies in FCT Abuja, Nigeria (Creswell & Creswell, 2018). The study area comprised Emzor Pharmaceutical

Industries Limited, a leading indigenous pharmaceutical manufacturer with a 65-hectare production facility at Sagamu, distribution and administrative operations in Abuja, over 16 product categories including vitamins, antibiotics, cardiovascular medications, and antihistamines in ISO and NAFDAC-approved facilities, and a workforce exceeding 80 employees across manufacturing, quality assurance, research and development, distribution, and administrative functions (Emzor, 2020; BusinessDay, 2025); and New Age Pharmaceutical Industry Limited, located at Plot 231/234 Kuje Road, Gwagwalada, Abuja, producing oral solid and oral liquid dosage forms with NAFDAC GMP re-assessment certification and a workforce exceeding 80 employees across production, quality control, regulatory affairs, and administrative departments (NAFDAC, 2024). Both companies operate within Nigeria's pharmaceutical market valued at approximately ₦500 billion, face import dependence exceeding 90% for raw materials, and must navigate NAFDAC regulatory requirements, yet differ in scale and strategic scope Emzor pursuing pan-African expansion and API production while New Age focuses on specialized dosage form manufacturing. The target population was 650 employees across both companies meeting inclusion criteria (minimum one year employment, full-time appointment, involvement in production, quality assurance, regulatory affairs, or administrative functions), distributed as 380 employees from Emzor Pharmaceutical Industries and 270 from New Age Pharmaceutical Industry. Sample size was determined using Krejcie and Morgan's (1970) formula: $s = \frac{X^2 \cdot N \cdot P \cdot (1-P)}{d^2 \cdot (N-1) + X^2 \cdot P \cdot (1-P)} = \frac{3.841 \times 650 \times 0.25}{(0.0025 \times 649) + 0.960} = \frac{624.16}{2.583} = 241.64 \approx 242$. Thus, 242 respondents were selected through multi-stage sampling combining purposive company selection with stratified random employee selection across departments and job levels. Primary data were collected via a structured questionnaire with three sections: demographics, vertical stratification (20 items covering four dimensions, $\alpha = 0.88$), and organizational competitive advantage (20 items covering four dimensions, $\alpha = 0.90$), using 5-point Likert scales. Content validity was established through

expert review by three academics in strategic management and pharmaceutical administration. Data were analyzed using SPSS v26.0 through descriptive statistics (frequencies, percentages,

means, and standard deviations) and inferential statistics (Pearson correlation, simple linear regression, ANOVA) at $p < 0.05$.

Data Analysis and Presentation of Results

Demographic Characteristics of Respondents

Table 1: Distribution of Respondents by Company

Company	Frequency	Percentage (%)
Emzor Pharmaceutical Industries Limited	142	58.7
New Age Pharmaceutical Industry Limited	100	41.3
Total	242	100.0

Source: Field Survey (2026)

The table reveals that 142 (58.7%) of respondents were from Emzor Pharmaceutical Industries, while 100 (41.3%) were from New Age Pharmaceutical Industry. This distribution reflects the larger workforce at Emzor compared to New Age.

Table 2: Distribution of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	152	62.8
Female	90	37.2
Total	242	100.0

The gender distribution shows male predominance (62.8%), consistent with gender patterns in Nigerian pharmaceutical manufacturing employment, though female representation (37.2%) indicates increasing gender inclusion in technical and administrative roles.

Table 3: Distribution of Respondents by Department

Department	Frequency	Percentage (%)
Production/Manufacturing	88	36.4
Quality Assurance/Control	52	21.5
Research and Development	28	11.6
Regulatory Affairs	32	13.2
Administration/Finance	42	17.4
Total	242	100.0

The departmental distribution indicates substantial representation across core pharmaceutical functions, enabling comparison of vertical stratification perceptions and competitive advantage assessments across technical and administrative domains.

Table 4: Distribution of Respondents by Job Level

Job Level	Frequency	Percentage (%)
Senior Management/Directors	18	7.4
Middle Management/Supervisors	48	19.8
Technical/Professional Staff	98	40.5
Operational/Support Staff	78	32.2
Total	242	100.0

The job level distribution shows that technical/professional staff (40.5%) and operational/support staff (32.2%) constitute the majority, with senior management representing only 7.4%. This distribution reflects the pyramid structure typical of pharmaceutical manufacturing.

Descriptive Analysis of Vertical Stratification

Table 5: Descriptive Statistics for Vertical Stratification Dimensions

Dimension	N	Mean	Std. Dev.	Remark
Structural Layering	242	3.68	1.12	High Extent
Authority Gradient	242	3.55	1.18	High Extent
Resource Allocation Disparity	242	3.22	1.24	Moderate Extent
Opportunity Differential	242	3.25	1.22	Moderate Extent
Grand Mean (Vertical Stratification)	242	3.42	1.15	Moderate to High Extent

Source: Field Survey (2026)

The descriptive analysis of vertical stratification reveals a grand mean of 3.42 (SD = 1.15), indicating that vertical stratification exists at a moderate to high extent among the selected pharmaceutical companies. The highest mean score was recorded for structural layering (Mean = 3.68, SD = 1.12), reflecting pronounced hierarchical levels between production floor staff

and top management. Authority gradient followed closely (Mean = 3.55, SD = 1.18), indicating significant concentration of decision-making power at senior levels. Opportunity differential recorded the lowest mean (Mean = 3.25, SD = 1.22), suggesting moderate but present disparities in access to training, promotions, and strategic participation.

Table 6: Detailed Descriptive Statistics for Vertical Stratification Items

S/N	Item Statement	N	Mean	Std. Dev.	Remark
Structural Layering					

1	There are many organizational levels between top management and operational staff	242	3.75	1.15	High Extent
2	Information must pass through multiple layers before reaching decision-makers	242	3.68	1.18	High Extent
3	The organizational chart shows clear vertical separation between departments	242	3.72	1.12	High Extent
4	Junior staff rarely interact directly with senior management	242	3.58	1.21	High Extent
5	There are distinct status differences between management and non-management staff	242	3.65	1.14	High Extent
Authority Gradient					
6	Major decisions are made exclusively by top management	242	3.62	1.22	High Extent
7	Middle managers have limited autonomy in their areas of responsibility	242	3.48	1.25	Moderate Extent
8	Operational staff cannot make decisions without management approval	242	3.55	1.19	High Extent
9	Strategic planning is conducted only by senior executives	242	3.52	1.24	Moderate Extent
10	Employee suggestions for improvement are rarely acted upon	242	3.68	1.18	High Extent
Resource Allocation Disparity					
11	Budget allocation favors management departments over production	242	3.18	1.28	Moderate Extent
12	Training investments are concentrated at managerial levels	242	3.25	1.22	Moderate Extent
13	Technology upgrades are prioritized for management functions	242	3.15	1.31	Moderate Extent
14	Operational departments receive fewer resources than administrative departments	242	3.28	1.25	Moderate Extent
Opportunity Differential					
15	Promotion opportunities are limited for non-management staff	242	3.32	1.29	Moderate Extent
16	Career development programs are available mainly to senior staff	242	3.22	1.24	Moderate Extent
17	Participation in strategic projects is restricted to management	242	3.18	1.28	Moderate Extent

18	Cross-functional training opportunities are limited for operational staff	242	3.28	1.22	Moderate Extent
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Source: Field Survey (2026)

Descriptive Analysis of Organizational Competitive Advantage

Table 7: Descriptive Statistics for Organizational Competitive Advantage Dimensions

Dimension	N	Mean	Std. Dev.	Remark
Cost Leadership	242	2.95	1.21	Moderate Extent
Product Differentiation	242	2.88	1.24	Moderate Extent
Operational Efficiency	242	3.15	1.18	Moderate Extent
Market Responsiveness	242	2.72	1.26	Moderate Extent
Grand Mean (Competitive Advantage)	242	2.98	1.18	Moderate Extent

Source: Field Survey (2026)

The analysis of organizational competitive advantage dimensions reveals a grand mean of 2.98 (SD = 1.18), indicating a moderate extent of competitive advantage. Operational efficiency recorded the highest mean (3.15, SD = 1.18), suggesting that companies maintain relatively stronger capabilities in production processes and

quality assurance. Market responsiveness recorded the lowest mean (2.72, SD = 1.26), indicating significant difficulties in adapting quickly to market changes, regulatory shifts, and competitive moves consistent with the high vertical stratification scores that may impede rapid decision-making.

Table 8: Detailed Descriptive Statistics for Competitive Advantage Items

S/N	Item Statement	N	Mean	Std. Dev.	Remark
Cost Leadership					
1	My company achieves lower production costs than competitors	242	2.85	1.28	Moderate Extent
2	We have efficient supply chain management that reduces costs	242	2.92	1.25	Moderate Extent
3	Our procurement processes minimize raw material expenses	242	2.98	1.22	Moderate Extent
4	We utilize economies of scale in production	242	3.05	1.19	Moderate Extent
5	Our cost structure is competitive with imported generics	242	2.98	1.24	Moderate Extent

Product Differentiation					
6	My company develops unique pharmaceutical products	242	2.78	1.28	Moderate Extent
7	We have proprietary formulations that competitors cannot easily copy	242	2.85	1.25	Moderate Extent
8	Our product quality exceeds industry standards	242	2.95	1.22	Moderate Extent
9	We offer product varieties that meet diverse customer needs	242	2.92	1.24	Moderate Extent
10	Our brand is recognized for quality in the pharmaceutical market	242	2.88	1.26	Moderate Extent
Operational Efficiency					
11	Our production processes meet NAFDAC quality standards consistently	242	3.22	1.18	Moderate Extent
12	We minimize waste and defects in manufacturing	242	3.15	1.21	Moderate Extent
13	Our equipment utilization rates are high	242	3.08	1.24	Moderate Extent
14	We maintain efficient inventory management systems	242	3.12	1.19	Moderate Extent
15	Our production scheduling meets market demand effectively	242	3.28	1.15	Moderate Extent
Market Responsiveness					
16	My company responds quickly to changes in customer demand	242	2.68	1.31	Moderate Extent
17	We adapt rapidly to new NAFDAC regulatory requirements	242	2.75	1.28	Moderate Extent
18	Our new product development cycle is faster than competitors	242	2.62	1.35	Low Extent
19	We anticipate market trends and adjust strategies accordingly	242	2.78	1.29	Moderate Extent
20	Our distribution network ensures rapid product availability	242	2.82	1.26	Moderate Extent

Source: Field Survey (2026)

Test of Hypothesis

Table 9: Model Summary for Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.512	0.262	0.259	1.018

Source: SPSS v26

The model summary reveals an R-value of 0.512, indicating a moderate negative correlation between vertical stratification and organizational competitive advantage. The R-square value of 0.262 indicates that vertical stratification explains 26.2% of the variance in organizational

competitive advantage among employees of the selected pharmaceutical companies. The adjusted R-square of 0.259 confirms that the model maintains explanatory power after adjusting for the number of predictors.

Table 10: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	85.248	1	85.248	82.187	0.000
Residual	238.752	240	0.996		
Total	324.000	241			

Source: SPSS v26

The ANOVA results show an F-statistic of 82.187 with a significance value of 0.000 ($p < 0.05$), indicating that the regression model is statistically significant. This confirms that vertical stratification significantly predicts organizational competitive advantage.

Table 11: Coefficients for Regression Analysis

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta		
(Constant)	4.725	0.198		23.864	0.000
Vertical Stratification	-0.508	0.056	-0.512	9.066	0.000

Source: SPSS v26

The coefficients table reveals that vertical stratification has a negative unstandardized coefficient ($B = -0.508$) with a standardized beta coefficient of -0.512. The t-value of 9.066 is significant at $p < 0.05$, confirming that vertical stratification has a statistically significant negative influence on organizational competitive advantage. The regression equation can be expressed as:

Organizational Competitive Advantage = 4.725 - 0.508(Vertical Stratification)

Since the significance value (0.000) is less than 0.05, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). Vertical stratification has a significant negative influence on organizational competitive advantage among employees of selected pharmaceutical companies in FCT Abuja, Nigeria.

Summary of Findings

The findings reveal that vertical stratification exists at a moderate to high extent (Mean = 3.42, SD = 1.15) among selected pharmaceutical companies in FCT Abuja, with structural layering (Mean = 3.68) and authority gradient (Mean = 3.55) most prevalent consistent with Barney's (1991) proposition that organizational structure influences resource exploitation and Perreira *et al.*'s (2018) identification of hierarchical-organizational orientations in commitment profiles. Organizational competitive advantage registers at a moderate level (Grand Mean = 2.98, SD = 1.18), with operational efficiency most developed (Mean = 3.15) and market responsiveness least developed (Mean = 2.72), corroborating Henderson and Cockburn's (1994) finding that integrative capabilities are critical for pharmaceutical competitiveness and Hansen and Wernerfelt's (1989) identification of organizational factors as primary performance determinants. Regression analysis confirms a significant negative relationship ($\beta = -0.512$, $p < 0.001$, $R^2 = 0.262$), supporting Barney's (1991) VRIO framework proposition that poor organizational structure weakens competitive potential and Makadok's (2001) argument that capability-building requires appropriate structural arrangements. The demographic profile predominantly male (62.8%), technical/professional staff (40.5%), operational staff (32.2%) suggests a workforce heavily stratified between technical execution and managerial oversight. The Emzor-New Age distribution (58.7% vs. 41.3%) indicates consistent vertical stratification patterns across companies of different scales. The vertical

stratification-competitive advantage disconnects, particularly the severe market responsiveness deficits (Mean = 2.72) amid high structural layering (Mean = 3.68), indicates that hierarchy impedes adaptive capabilities, aligning with Barney's (2001) call for dynamic capability development and BusinessDay's (2025) reporting on Emzor's strategic adaptation challenges.

Conclusion

This study investigated vertical stratification's influence on organizational competitive advantage among employees of Emzor Pharmaceutical Industries Limited and New Age Pharmaceutical Industry Limited in FCT Abuja, Nigeria. Three conclusions emerge. First, vertical stratification is prevalent in Nigerian pharmaceutical companies structural layering (Mean = 3.68) and authority gradient (Mean = 3.55) dominate, consistent with Barney's (1991) characterization of organizational structure as a determinant of resource exploitation and Perreira *et al.*'s (2018) findings on hierarchical-organizational orientations. Second, organizational competitive advantage is multidimensional but unevenly developed: operational efficiency dominates (Mean = 3.15) while market responsiveness severely lags (Mean = 2.72), corroborating Henderson and Cockburn's (1994) identification of integrative capabilities as critical for pharmaceutical competitiveness and Hansen and Wernerfelt's (1989) finding that organizational factors outweigh economic factors in performance determination. Third, and critically, vertical stratification significantly and negatively influences organizational competitive advantage ($\beta = -0.512$, $p < 0.001$, $R^2 = 0.262$), validating Barney's (1991; 2007) VRIO/VRIS framework in Nigerian pharmaceutical contexts and supporting Makadok's (2001) capability-building perspective underscoring that excessive hierarchy impedes information flow, innovation capacity, and adaptive responsiveness where competitive positioning depends on rapid regulatory compliance and product development.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are proposed:

1. Pharmaceutical company managers should flatten organizational structures and implement cross-functional team mechanisms.
2. The National Agency for Food and Drug Administration and Control (NAFDAC) and the Pharmaceutical Society of Nigeria should develop standardized organizational governance guidelines for pharmaceutical manufacturing, defining structural, authority, resource, and opportunity equity standards.
3. Development partners and pharmaceutical industry consultants should deliver capacity-building programs equipping pharmaceutical managers with dynamic capability development, knowledge management, and adaptive structuring tools,

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