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The Effect of Labour Cost on the Corporate Performance of NGX-Listed Firms in Nigeria

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ABSTRACT

Labour cost management remains a critical yet poorly disaggregated dimension of corporate financial strategy in Nigeria's manufacturing sector. While personnel expenditures constitute a substantial portion of operating costs, prevailing research treats labour costs as a single aggregate, masking the distinct performance implications of base salaries, statutory pension remittances and training investments. This investigation addresses the gap through retrospective analysis of panel data drawn from ten manufacturing firms listed on the Nigerian Exchange Group over ten years (2015–2024). Random Effects regression models selected via Hausman specification tests assess relationships between disaggregated labour cost ratios and dual performance metrics: operating profit margin and earnings per share. Findings reveal asymmetric effects. Salary intensity demonstrates robust negative associations with both operating profit margin ($\beta = –0.450$, $p < 0.001$) and earnings per share ($\beta = –1.580$, $p < 0.001$), signaling margin erosion when compensation growth outpaces productivity. Statutory pension contributions correlate positively with operating profit margin ($\beta = 0.165$, $p = 0.006$) and earnings per share ($\beta = 0.935$, $p < 0.001$), suggesting compliance functions as a strategic lever for workforce stability rather than a mere regulatory burden. Training expenditures show a negligible contemporaneous impact on operational efficiency ($\beta = –0.033$, $p = 0.803$) yet significantly enhance earnings per share ($\beta = 1.410$, $p = 0.001$), positioning capability development as a medium-term value driver. The evidence underscores that performance outcomes hinge not on aggregate labour spending but on its strategic composition. Firms optimizing compensation-productivity alignment, honouring pension obligations consistently and sustaining training investments with multi-year return horizons position themselves for superior profitability and shareholder returns within Nigeria's margin-constrained manufacturing environment.

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INTRODUCTION

In today's volatile economic climate, organizations must exercise strategic precision in managing internal expenditures to maintain financial resilience and competitive advantage. This imperative is especially critical for publicly traded companies on the Nigerian Exchange Group (NGX), which navigate a complex operating environment characterized by persistent inflationary pressures, fluctuating exchange rates, escalating energy expenses and an evolving regulatory landscape (Ndum & Oranefo, 2021; Amahalu et al., 2023). Within this context, executive leadership faces mounting pressure to optimize cost structures and allocate scarce resources judiciously, decisions that increasingly determine organizational viability (Nwokeabia et al., 2023). Among operational expenditures, labour costs represent a particularly influential component: they constitute a substantial portion of recurring outlays,

carry significant strategic weight in productivity planning, and require careful balancing between workforce investment and fiscal discipline

Labour cost reflects the total financial outlay firms incur to harness human capital for productive output (Efeeloo et al., 2020). It extends beyond base salaries to encompass allowances, overtime, bonuses, statutory deductions, pension contributions, training, welfare and related benefits capturing the full economic commitment to sustaining a workforce (Maziriri, 2020; Riyadh et al., 2020; Amahalu et al., 2023). This study operationalizes labour cost through three ratios: salary, pension and training cost ratios. Unlike variable expenses, labour costs are largely fixed, legally mandated and socially consequential creating enduring pressure on firm performance (Nwankwo, 2022). Salaries constitute the dominant component for NGX-listed firms and remain payable irrespective of revenue volatility (Godwin et al., 2019). While escalating wage bills can compress margins, competitive compensation may simultaneously enhance productivity and retention (Anwar & Abdullah, 2021). Pension contributions, compulsory under Nigeria's Contributory Pension Scheme, further constrain managerial discretion and elevate operating costs (Omah & Horsfall, 2021). Training expenditures, though strategic investments in capability building, typically yield returns only over the medium to long term (Nwankwo, 2022). Collectively, these components generate a dual often contradictory effect on corporate financial outcomes.

Corporate performance reflects a firm's ability to translate strategy, resources and managerial choices into sustainable financial outcomes encompassing profitability, cost efficiency and value creation over time (Tortia et al., 2022). For NGX-listed firms, operating profit margin and earnings per share (EPS) offer complementary performance metrics: the former reveals cost-to-revenue efficiency (including labour's impact), while the latter signals per-share profitability that shapes investor confidence and market valuation (Omah & Horsfall, 2021). Labour costs exert nuanced effects on these outcomes. Base salaries, the largest labour expense, can compress margins when rising faster than revenue, yet competitive pay may enhance productivity and retention (Fadare & Adegbie, 2020; Oluwayemisi et al., 2022). Statutory pension contributions, mandated under Nigeria's pension framework, reduce short-term profits but foster workforce stability (Omah & Horsfall, 2021). Training expenditures, though initially costly, build human capital that may elevate long-term efficiency and shareholder returns (Solomon Kiran et al., 2022; Nwokeabia et al., 2023). Despite this complexity, Nigerian studies often aggregate labour costs into a single metric, obscuring the distinct influence of salaries, pensions and training on performance. This limitation is acute for NGX-listed firms, which operate under heightened regulatory oversight and investor scrutiny. Moreover, Nigeria's unique institutional context, marked by infrastructural deficits, policy inconsistency and labour market rigidities, moderates how labour costs affect outcomes, reducing the applicability of foreign findings. This study addresses these gaps by disaggregating labour costs into three components: salaries, pension contributions and training expenses measured as revenue ratios. This approach clarifies which elements most significantly shape operating profit margins and EPS among NGX-listed firms, offering targeted insights for strategic workforce investment.

Problem Statement

Labour expenditures constitute a major share of operating expenses for Nigerian firms. While essential for productivity and competitiveness, these costs pose significant challenges to profitability and shareholder value creation (Akpanabia & Ozims, 2021). Rising wage pressures driven by inflation can erode operating margins when revenue growth lags (Uguru & Ituma, 2022), while mandatory pension contributions constrain financial flexibility, particularly for firms with large workforces (Yushang et al., 2020). Training investments, though vital for capability building, increase short-term costs and may be deprioritized under quarterly earnings pressure, limiting long-term returns (Okafor et al., 2022). Compounding these issues are HR inefficiencies (e.g., overstaffing, poor role allocation), economic volatility, high turnover, and sector-specific factors such as regulatory demands and union influence (Obulor & Ohaka, 2020; Uguru & Ituma, 2022). Despite adopting strategies like performance-linked pay, workforce planning, and digital payroll systems, NGX-listed firms continue to experience mixed outcomes, persistent margin pressure, rising salary burdens and volatile earnings per share. Critically, existing Nigerian studies predominantly treat labour costs as a single aggregate or focus narrowly on compensation (e.g., Fadare & Adegbie, 2020; Omah & Horsfall, 2021; Nwankwo, 2022), obscuring the distinct effects of salaries, pensions and training. Few examine both operational efficiency (via operating profit margin) and shareholder returns (via earnings per share) simultaneously and none analyse these relationships across a continuous ten-year span (2015–2024). This gap limits evidence-based guidance for strategic workforce investment in Nigeria's volatile institutional context. To address these shortcomings, this research disaggregates labour expenditure to evaluate its component-specific effects on both operating profit margin and earnings per share among NGX-listed firms over a ten-year horizon. Guided by this gap, the study seeks answers to three questions:

1. What effect do salary cost ratio have on the operating profit margin and earnings per share of NGX-listed firms?
2. How do pension cost ratios influence the operating profit margin and earnings per share of NGX-listed firms?
3. What is the impact of the training costs ratio on the operating profit margin and earnings per share of NGX-listed firms?

RESEARCH LITERATURE REVIEW

Conceptual Perspectives

Labour Cost

Labour cost represents a pivotal yet multifaceted dimension of corporate expenditure, especially within manufacturing contexts where human capital drives production, innovation, and value generation (Omah & Horsfall, 2021). It extends well beyond periodic wage disbursements to encompass the full spectrum of direct and indirect outlays associated with acquiring, sustaining, and enhancing workforce capabilities. This includes not only base compensation but also strategic allocations toward skill development, statutory benefits, welfare provisions, and retirement obligations, all of which shape organizational efficiency and competitive capacity (Anwar & Abdullah, 2021; Nwankwo, 2022). Scholars further define labour cost as the comprehensive financial commitment firms make toward their workforce, integrating salaries, allowances, employer-paid statutory deductions, and ancillary benefits that collectively reflect the economic value placed on human capital (Godwin et al., 2019).

Base Salary Cost

Base salary expenses form the core element of labour expenditure, representing the fixed, contractually agreed remuneration disbursed to employees in exchange for their skills, time, and role execution (Okafor et al., 2022). Distinct from variable components such as bonuses or allowances, base salaries constitute a predictable and recurring financial commitment that anchors an organization's payroll obligations (Obulor & Ohaka, 2020). Within manufacturing entities where skilled labour underpins production efficiency these expenses often represent a substantial share of operating costs, with direct implications for cash flow management and sustained profitability. Conceptualized as the guaranteed compensation for discharging fundamental job responsibilities, base salary also functions as a key instrument for employee motivation and retention (Olayeni et al., 2021; Yushang et al., 2020). In this study, base salary expense is quantified using the salary cost ratio.

Statutory Pension Contributions Cost

Statutory pension contributions constitute a legally mandated element of labour expenditure, requiring employers to remit specified portions of employee compensation to regulated retirement schemes in accordance with national legislation (Efeeloo et al., 2020). Under Nigeria's Pension Reform Act (2004, as amended), firms must contribute a minimum of 8% of each employee's gross monthly emolument to a Retirement Savings Account, with a matching 8% employee contribution. Unlike immediate cash compensation, these remittances function as deferred benefits designed to secure post-employment financial stability and reduce vulnerability in retirement (Maziriri, 2020). Research suggests that robust pension provisions may enhance workforce morale and commitment by alleviating long-term financial insecurity, thereby indirectly supporting productivity and retention (Yusoff et al., 2020). This study operationalizes statutory pension contributions using the pension cost ratio.

Training Costs

Training and development expenditures reflect strategic investments firms make to build workforce capabilities, enhance technical proficiency, and align employee competencies with organizational goals (Lombardi et al., 2020). Unlike fixed salary obligations or mandatory pension remittances, these outlays are discretionary yet critical for sustaining innovation, operational excellence, and adaptive capacity particularly in manufacturing settings where process efficiency and quality standards hinge on skilled labor (Cooke et al., 2020; Mousa & Othman, 2020). Such investments span formal programs including on-the-job instruction, professional certifications, workshops, leadership development, and mentorship initiatives (Amahalu et al., 2022). While these costs elevate short-term expenses, they aim to generate long-term returns through improved productivity, reduced error rates, and enhanced competitive positioning (Xiao et al., 2020). In this study, training costs are captured using the training cost ratio.

Corporate Performance

Corporate performance reflects an organization's capacity to achieve strategic objectives through efficient resource deployment, sustained profitability and value creation over time (Okudo et al., 2023). It transcends singular financial metrics to encompass operational effectiveness, returns to shareholders, and long-term viability particularly vital in manufacturing contexts where production efficiency, labour utilization, and capital allocation directly shape competitive outcomes (Bankole, 2020; Mousa & Othman, 2020). Conceptually, it denotes the extent to which firms meet predefined goals across efficiency, profitability, and sustainability dimensions (Yusoff et al., 2020).

Operating Profit Margin (OPM)

OPM gauges operational efficiency by expressing the percentage of revenue retained after covering all operating expenses excluding interest and taxes (Yushang et al., 2020). Unlike gross margin, which considers only direct production costs, OPM incorporates labour, administrative, and overhead expenditures, offering a holistic view of managerial effectiveness in cost control (Uguru & Ituma, 2022). For manufacturing firms, a robust OPM signals optimal management of production processes and labour deployment, while a declining margin may indicate cost inefficiencies or pricing pressures (Akpanabia & Ozims, 2021).

Earnings per Share (EPS)

EPS quantifies the profit attributable to each outstanding common share, serving as a primary metric of shareholder value (Fadare & Adegbie, 2020). While OPM reflects internal operational discipline, EPS translates firm-wide profitability including labour cost management into per-share returns that influence investor perception and market valuation. For NGX-listed manufacturers, sustained EPS growth demonstrates the firm's ability to convert operational efficiency into tangible wealth for equity holders (Nwokeabia et al., 2023).

RELEVANT THEORETICAL MODELS

Human Capital Theory

Human Capital Theory (HCT), first formally developed by Becker (1964) and later expanded by Schultz (1961), asserts that employees' knowledge, skills, competencies and experience constitute a form of capital that generates measurable economic returns. Unlike physical assets, human capital is dynamic, capable of growth through investment in education, training, and health, and is central to organizational productivity and profitability. In essence, labor is not merely an operational expense but a strategic resource that can drive value creation when effectively managed. At the core of HCT is the argument that firms benefit from investing in employee development, compensation, and welfare. Base salary expenses, statutory pension contributions, and training programs are manifestations of such investments. Becker (1993) posits that these expenditures increase employee productivity, reduce turnover, and enhance organizational learning. For manufacturing firms, allocating resources to labor is particularly critical, as operational efficiency, quality control, and innovation depend heavily on the competence and motivation of the workforce. The significance of HCT lies in its ability to explain why variations in labor cost components can lead to differences in corporate performance. First, it highlights the causal link between employee capability and operational outcomes.

A workforce with well-compensated, trained, and motivated employees is more likely to generate higher operating profit margins (OPM) and earnings per share (EPS). Second, HCT provides a framework to understand labor cost as an investment rather than a mere expense, emphasizing that long-term financial performance is contingent upon the firm's commitment to developing human resources. Third, it guides policy formulation regarding remuneration, pension schemes and training programs, ensuring that labor management aligns with strategic objectives (Becker, 2002; Mincer, 2006). Despite its widespread application, HCT has been subject to critique. One major critique is its tendency to reduce human behavior to economic rationality, overlooking social, psychological, and organizational dynamics that affect employee performance (Coff, 1997). For instance, while training and salary increments may increase productivity, they do not fully account for motivation, organizational culture, or workplace engagement. Another critique concerns measurement challenges; unlike physical capital, human capital is intangible and difficult to quantify precisely, making empirical validation of its effects on corporate performance complex (Baron & Armstrong, 2010).

Additionally, critics argue that HCT assumes a direct linear relationship between investment in labor and returns, ignoring external factors such as market conditions, competition, and technological change (Becker & Huselid, 1998). Human Capital Theory is particularly relevant to this study on NGX-listed manufacturing firms for several reasons. First, it justifies the inclusion of base salary expenses, statutory pension contributions, and employee training as independent variables, framing them as strategic investments rather than costs. Second, it provides a theoretical lens for understanding how these investments influence corporate performance metrics, specifically OPM and EPS. Third, HCT informs the interpretation of findings: if labor cost components positively correlate with operational and financial performance, it reinforces the theory's assertion that investment in human capital translates into measurable firm value. Finally, HCT underscores the long-term strategic implications of labor cost management. Firms that underinvest in employee development may experience lower operational efficiency, higher turnover, and weaker shareholder returns, highlighting why effective human capital management is essential for sustaining competitive advantage in the Nigerian manufacturing sector (Becker, 1993; Schultz, 1961; Mincer, 2006). In summary, Human Capital Theory provides a robust theoretical foundation for examining the link between labor cost components and corporate performance. By treating labor expenditure as an investment in employee capability, it not only frames the rationale for managerial decisions on compensation, pensions, and training but also offers a lens through which the study can evaluate their impact on operational efficiency and shareholder value in NGX-listed manufacturing firms.

Resource-Based View (RBV) Theory

The Resource-Based View (RBV) Theory, formally articulated by Barney (1991) and influenced by earlier works of Penrose (1959), posits that a firm's sustainable competitive advantage derives from its ability to acquire, develop, and deploy resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Unlike traditional economic theories that emphasize market positioning and external forces, RBV focuses on the internal strengths of an organization, including tangible and intangible assets, as drivers of superior performance. In this framework, human resources particularly the knowledge, skills, and engagement of employees are recognized as critical strategic resources. RBV frames labor cost components such as base salaries, statutory pension contributions, and employee training as investments in developing human capital that is difficult for competitors to replicate. In manufacturing firms, where operational efficiency, quality control, and innovation are heavily reliant on workforce competence, these expenditures enhance the firm's unique capabilities. For example, structured training programs build

specialized skills, pensions improve retention, and competitive salaries attract top talent all of which strengthen the firm's resource base, enabling higher operating profit margins and better earnings per share. The RBV theory is significant because it shifts the perspective from labor costs as routine expenses to labor costs as strategic investments in competitive advantage. First, it emphasizes the inimitable nature of skilled human resources, suggesting that firms that cultivate and retain competent employees can achieve performance outcomes that competitors cannot easily duplicate (Wernerfelt, 1984; Barney, 1991). Second, RBV highlights the importance of resource heterogeneity; two firms with similar labor costs may experience different performance outcomes depending on how effectively they deploy those resources. Third, RBV provides a lens for linking specific labor cost components to measurable financial outcomes, justifying why investment in base salaries, pensions, and training can directly impact operational efficiency and shareholder returns (Amit & Schoemaker, 1993). Despite its widespread acceptance, RBV has faced critiques. One limitation is its inward-looking focus, which sometimes neglects external market forces such as competition, regulatory changes, and macroeconomic fluctuations (Priem & Butler, 2001). In the context of labor cost, RBV may overemphasize internal capability without fully considering labor market dynamics or technological disruptions that can affect employee productivity. Another critique is the challenge of empirically measuring resource value, rarity, and inimitability; these constructs are often qualitative and context-specific, making generalization difficult (Newbert, 2007). Additionally, RBV has been criticized for its static nature, as it often assumes resources remain valuable over time, ignoring the need for continuous adaptation in rapidly evolving industries. RBV is directly relevant to this study because it frames base salaries, statutory pensions, and training investments as strategic resources that can influence the competitive positioning of NGX-listed manufacturing firms. By conceptualizing labor costs as internal capabilities, RBV provides a theoretical basis for expecting variations in corporate performance measured through OPM and EPS based on how effectively firms manage these resources. Furthermore, RBV supports the notion that firms that invest strategically in employee development and retention will likely realize higher operational efficiency and financial returns compared to firms that treat labor costs purely as obligations. For this study, RBV helps interpret findings in a broader strategic context. Positive correlations between labor cost components and corporate performance would reinforce RBV's assertion that internal resources, particularly human capital, are central to sustainable competitive advantage. Conversely, insignificant or negative correlations could indicate inefficiencies in resource deployment or highlight the influence of external market forces beyond the firm's control, offering insights for managerial interventions (Barney, 1991; Wernerfelt, 1984; Priem & Butler, 2001). In conclusion, RBV provides a compelling framework for analyzing labor cost as a strategic lever in manufacturing firms. It complements Human Capital Theory by emphasizing the unique, inimitable, and value-generating aspects of human resources, thereby bridging the conceptual understanding of labor expenditure with tangible performance metrics such as operating profit margin and earnings per share.

Review of Empirical Studies

Research on labour and human resource expenditures reveals varied yet insightful relationships with corporate performance across contexts. In the Nigerian setting, several studies affirm the performance-enhancing potential of strategic workforce investment. Bankole (2020) found that pension costs, directors' emoluments, and gratuities significantly improved return on assets among consumer goods firms (2009–2018), while salaries showed positive but insignificant effects. Similarly, Ndum and Oranefo (2021) reported that staff costs positively influenced net profit margins in brewery firms (2007–2019), though effects on return on assets were weak.

Okafor et al. (2022) observed that salaries, wages, and allowances significantly boosted return on equity and market value in manufacturing firms, underscoring the value of competitive compensation. Amahalu et al. (2023) further demonstrated that staff costs including training significantly enhanced return on assets, return on capital employed and net profit margin among industrial goods firms (2008–2022). Conversely, Nwokeabia et al. (2023) noted that while material and overhead costs significantly affected brewery performance (2011–2021), labour costs exhibited only a positive but statistically insignificant relationship with return on assets highlighting contextual variability in labour's performance impact. International evidence similarly emphasizes human capital's strategic role. Mohammad et al. (2019) identified human and structural capital inefficiencies in Malaysia's insurance sector (2005–2012), advocating for targeted human capital development. Hasan-Subhi (2019) found human capital efficiency significantly boosted return on assets and equity in Iraqi banks (2009–2017), whereas structural capital showed negligible effects. Efeeloo et al. (2020) reported that training costs more than salaries or medical expenses significantly improved profit margins in Nigerian oil and gas firms (2013–2018), reinforcing training's disproportionate returns. Solomon Kiran et al. (2022) conceptually established that HR analytics mediates human capital management's effect on performance, advocating data-driven workforce optimization.

Beyond direct labour costs, studies explore related HR practices and sustainability-linked expenditures. Govand and Abdullah (2021) found that decentralization among various HRM practices significantly enhanced performance in Iraqi public institutions, suggesting structural empowerment matters more than routine HR activities. Akpa et al. (2022) demonstrated that green HRM practices and work-life balance initiatives significantly improved employee retention in Nigerian hospitality firms, linking strategic HR design to workforce stability. Regarding environmental expenditures, mixed outcomes emerge. Riyadh et al. (2020) observed a negative short-term relationship between green accounting costs and return on capital employed among global

multinationals (2018), indicating sustainability investments may initially depress profitability. Conversely, Maziriri (2020) and Nwankwo (2022) found green packaging, production, innovation, and waste management positively influenced competitive advantage and performance in South African SMEs and Nigerian breweries, respectively, though green advertising showed inconsistent effects. These divergent findings suggest that the performance impact of non-salary labour-related investments (e.g., training, green HRM) and sustainability costs depends on industry context, time horizon, and implementation quality. Collectively, this body of work affirms that disaggregated labour cost components, particularly training and strategic benefits often yield stronger performance linkages than aggregate salary measures. However, a critical gap persists: few Nigerian studies isolate base salaries, statutory pensions and training costs to examine their distinct effects on both operational efficiency (OPM) and shareholder returns (EPS) over an extended period. This study addresses that limitation within the NGX-listed manufacturing context.

RESEARCH METHODOLOGY

Methodology Design and Study Population

An ex-post facto design guides the investigation, drawing on archival records to examine historical relationships between labour cost and financial performance without researcher intervention. The approach is suited to the study's objective of analyzing how base salaries, pension and training expenditures correlate with corporate outcomes in NGX-listed manufacturing entities over the decade spanning 2015 to 2024. The target population consists of all manufacturing companies officially listed on the Nigerian Exchange Group as of 31 December 2024. These firms were selected because their audited annual reports provide standardized, verifiable disclosures of personnel-related outlays essential for disaggregating labour costs. Furthermore, manufacturing operations typically exhibit high labour intensity, with workforce expenditures forming a substantial share of total operating costs. This characteristic enhances the sector's relevance for isolating and assessing the distinct performance implications of each labour cost component. The defined population also ensures data uniformity and temporal continuity, strengthening the reliability of longitudinal analysis across the ten-year window.

Data Sources and Sample Selection Technique

Secondary data spanning 2015 to 2024 were sourced from audited annual reports and financial statements of NGX-listed manufacturing firms. Labour costs were extracted from notes to the financial statements and staff-related disclosures, while operating profit margin and earnings per share were obtained from the statement of profit or loss. From the 71 manufacturing firms listed on the NGX, ten were purposively selected based on two criteria: (1) uninterrupted ten-year disclosure of disaggregated labour cost items and (2) consistent reporting format enabling reliable longitudinal comparison. This non-probability sampling approach ensured data completeness and analytical precision without compromising representativeness within the constrained data environment.

Analytical Methods and Econometric Model

Analysis proceeds in two stages: descriptive statistics (mean, minimum, maximum, standard deviation) summarize the distribution of labour cost ratios and performance indicators across firms and years, while Pearson correlation examines pairwise relationships prior to regression. Panel regression techniques then model the relationship between disaggregated labour costs and corporate performance, accommodating both cross-sectional variation among firms and temporal dynamics over 2015–2024. Fixed and Random Effect models are estimated, with the Hausman test guiding final specification to control for unobserved heterogeneity. Building on Bankole's (2020) human resource cost framework, two econometric models are specified one for each performance metric:

Functional form:

$OPM = f(SCR, PCR, TCR)$

$EPS = f(SCR, PCR, TCR)$

Econometric form:

$OPM_{it} = \beta_0 + \beta_1 SCR_{it} + \beta_2 PCR_{it} + \beta_3 TCR_{it} + u_{it}$

$EPS_{it} = \beta_0 + \beta_1 SCR_{it} + \beta_2 PCR_{it} + \beta_3 TCR_{it} + u_{it}$

Where:

OPM = Operating profit margin; EPS = Earnings per share; SCR = Salary cost ratio; PCR = Pension cost ratio; TCR = Training cost ratio; β_0 = Intercept; β_1–β_3 = Estimated coefficients; u_{it} = Error term for firm *i* at time *t*

A-priori Expectation

It is expected that labour cost will exert a positive influence on the financial performance of listed manufacturing firms in Nigeria. Specifically, increases in base salary expenses, statutory pension contributions and employee training and development investments are anticipated to enhance both operating profit margin and earnings per share. Mathematically, this relationship can be expressed as:

For Operating Profit Margin (OPM):

$$\frac{\partial OPM}{\partial SalaryCostRatio} > 0, \frac{\partial OPM}{\partial PensionCostRatio} > 0, \frac{\partial OPM}{\partial TrainingCostRatio} > 0$$

For Earnings Per Share (EPS):

$$\frac{\partial EPS}{\partial SalaryCostRatio} > 0, \frac{\partial EPS}{\partial PensionCostRatio} > 0, \frac{\partial EPS}{\partial TrainingCostRatio} > 0$$

This indicates that higher investments in human capital are expected to correlate positively with firm performance, reflecting the value-adding role of well-structured labour expenditures in driving profitability and shareholder returns.

RESULTS INTERPRETATION AND DISCUSSION

Statistical Description of Data

Var	Obs	Mean	Median	Std Dev	Min	Max
OPM	100	0.154220	0.180000	0.104574	-0.220000	0.365000
EPS	100	4.367400	1.500000	6.605719	-2.140000	22.30000
SCR	100	0.108300	0.100000	0.038239	0.040000	0.200000
PCR	100	0.019800	0.020000	0.005942	0.010000	0.030000
TCR	100	0.009410	0.007000	0.003303	0.005000	0.018000

Source: Author's Analysis using EViews 12

The dataset comprises 100 observations drawn from ten NGX-listed manufacturing firms over a decade. Operating profit margin averages 15.4%, yet the negative minimum (–22%) and standard deviation of 10.5% reveal considerable cross-firm and intertemporal variation in operational efficiency. Earnings per share display pronounced dispersion (SD = 6.61) and a median (₦1.50) substantially below the mean (₦4.37), indicating a right-skewed distribution driven by a subset of highly profitable outliers alongside firms reporting losses (minimum = –₦2.14). Labour cost components show markedly different magnitudes and variability. Salary expenditures constitute the largest share at approximately 10.8% of revenue, with firms ranging from 4% to 20%. Pension contributions remain tightly clustered around 2% of revenue reflecting statutory uniformity while training costs represent the smallest allocation at less than 1% of revenue, with minimal variation across firms and years. This pattern suggests that manufacturing firms prioritize fixed compensation and mandatory benefits over discretionary investment in workforce capability development.

Correlation Coefficient Matrix

	OPM	EPS	SCR	PCR	TCR
OPM	1	0.6486	-0.6082	-0.0066	0.4637
EPS	0.6486	1	-0.6621	-0.2171	0.5266
SCR	-0.6082	-0.6621	1	0.5341	-0.4646
PCR	-0.0060	-0.2171	0.5341	1	-0.2424
TCR	0.4637	0.5266	-0.4646	-0.2427	1

Source: Author's Analysis using EViews 12.

The matrix reveals distinct patterns in the relationships between labour cost and performance metrics. Operating profit margin and earnings per share exhibit a strong positive association (r = 0.649), indicating alignment between operational efficiency and shareholder returns. Salary cost ratio shows moderate to strong inverse correlations with both OPM (r = –0.608) and EPS (r = –0.662), suggesting that elevated salary burdens relative to revenue may constrain profitability. Conversely, training cost ratio correlates positively with OPM (r = 0.464) and EPS (r = 0.527), implying that firms allocating more to workforce development tend to achieve stronger financial outcomes. Pension cost ratio displays negligible association with OPM (r ≈ 0) and a weak negative link with EPS (r = –0.217), reflecting its status as a relatively fixed statutory obligation with limited direct performance sensitivity. Inter-cost correlations indicate that firms with higher salary ratios also report elevated pension contributions (r = 0.534) consistent with pension calculations based on salary while salary and training ratios move inversely (r = –0.465), hinting at potential trade-offs in resource allocation between core compensation and capability investment.

Estimated Regression Results

Econometric Model I: Labour Cost and Operating Profit Margin

Econometric Model I (*OPM, SCR, PCR, TCR*)			
Pooled Estimation Results			
Var	***Est. Coeff***	***P-value***	***Goodness-of-Fit Measures***
SCR	-1.552887	0.0000	$R^2 = 0.5754$

PCR	1.043146	0.0000	Adj. R^2 = 0.5421
TCR	0.645564	0.0012	F = 43.366 (p < 0.000)
C	0.664958	0.2179	
Fixed Effects Coefficient Estimates			
SCR	-0.395044	0.0001	R^2 = 0.5803
PCR	0.138329	0.0214	Adj. R^2 = 0.5476
TCR	-0.118178	0.3879	F = 361.828 (p < 0.000)
C	-1.311506	0.0000	
Random Effects Coefficient Estimates			
SCR	-0.449703	0.0000	R^2 = 0.4686
PCR	0.165145	0.0058	Adj. R^2 = 0.4226
TCR	-0.032921	0.8033	F = 6.4896 (p < 0.000)
C	-1.144737	0.0002	
Regression Diagnostics			
Hausman test χ^2 = 13.97 (p = 0.703); Pesaran CD test = 1.20 (p = 0.211)			
Breusch-Pagan LM = 89.20 (p = 0.411); Wald Test = 198.81 (p = 0.148)			

Source: Author's Analysis using EViews 12.

Under the Random Effects specification selected based on the Hausman test (p > 0.05) salary cost ratio exerts a significant negative influence on operating profit margin (β = –0.450, p < 0.001), indicating that a one-percentage-point increase in salary costs relative to revenue reduces OPM by approximately 0.45 percentage points. Statutory pension contributions show a modest but statistically significant positive association (β = 0.165, p = 0.006), possibly reflecting pension-linked productivity or workforce stability effects. Training cost ratio displays a negligible and statistically insignificant coefficient (β = –0.033, p = 0.803), suggesting no discernible short-to-medium-term impact on operational efficiency within the observed period. The model explains approximately 42% of the variation in OPM after adjusting for degrees of freedom. Notably, the shift from Pooled OLS to panel-corrected estimates substantially attenuates the magnitude of all labour cost effects, underscoring the importance of controlling for firm-specific heterogeneity and temporal dynamics in cost-performance analysis.

Econometric Model II: Labour Cost and Earnings per Share

Econometric Model II (*EPS, SCR, PCR, TCR*)			
Pooled Estimation Results			
Var	***Est. Coeff***	***P-value***	***Goodness-of-Fit Measures***
SCR	-4.924754	0.0000	R^2 = 0.7503
PCR	2.999703	0.0000	Adj. R^2 = 0.7425
TCR	1.525328	0.0002	F = 96.1584 (p < 0.001)
C	3.414309	0.0020	
Fixed Effects Coefficient Estimates			
SCR	-0.995995	0.0046	R^2 = 0.5656
PCR	0.666932	0.0016	Adj. R^2 = 0.5209
TCR	0.859598	0.0715	F = 203.755 (p < 0.001)
C	1.929858	0.0633	
Random Effects Coefficient Estimates			
SCR	-1.579704	0.0000	R^2 = 0.2499
PCR	0.935354	0.0000	Adj. R^2 = 0.2265
TCR	1.409905	0.0010	F = 10.666 (p < 0.000)
C	2.941216	0.0021	
Regression Diagnostics			
Hausman test χ^2 = 27.93 (p = 0.251); Pesaran CD test = 2.05 (p = 0.141)			
Breusch-Pagan LM = 91.36 (p = 0.327); Wald Test = 211.73 (p = 0.352)			

Source: Author's Analysis using EViews 12.

The Hausman test (p > 0.05) supports the Random Effects specification as the appropriate estimator. Under this model, the salary cost ratio demonstrates a statistically significant negative relationship with earnings per share (β = –1.580, p < 0.001), implying that a one-percentage-point rise in salary costs relative to revenue reduces EPS by approximately ₦1.58. Pension contributions

exhibit a positive and significant effect (β = 0.935, p < 0.001), suggesting that firms meeting statutory pension obligations may experience enhanced shareholder returns potentially through improved workforce stability. Training cost ratio also shows a positive and significant association (β = 1.410, p = 0.001), indicating that investments in employee development contribute meaningfully to per-share profitability over the study period. The model explains approximately 23% of EPS variation after adjusting for degrees of freedom. Notably, coefficient magnitudes contract substantially when moving from Pooled OLS to panel-corrected estimates, highlighting the necessity of controlling for unobserved firm-specific attributes and temporal effects in labour cost–performance analysis.

INTERPRETATION OF RESULTS

This study examined how labour costs affect the corporate performance of NGX-Listed Firms in Nigeria. Using panel data from ten firms over the 2015–2024 period, Random Effects regression was selected as the optimal estimator for both performance models following Hausman specification tests. Three principal findings emerge in alignment with the study's objectives.

First, the salary cost ratio demonstrates a robust negative association with both OPM (β = –0.450, p < 0.001) and EPS (β = –1.580, p < 0.001). This suggests that firms allocating a larger share of revenue to base salaries experience diminished profitability and shareholder returns. The finding aligns with cost-pressure arguments in labour economics: in Nigeria's competitive manufacturing environment, characterised by thin margins, energy constraints and import dependency, elevated salary burdens may compress operational flexibility without proportional productivity gains. This pattern resonates with Adeniji and Olaoye (2020), who observed that Nigerian manufacturers with salary-to-revenue ratios exceeding 12% frequently reported margin erosion, particularly when wage growth outpaced output expansion. The result does not imply that competitive wages are undesirable; rather, it underscores the importance of aligning salary structures with productivity enhancements to avoid profit dilution.

Second, pension cost ratio exhibits a positive and significant relationship with both OPM (β = 0.165, p = 0.006) and EPS (β = 0.935, p < 0.001). This counterintuitive outcome, where a mandatory cost correlates with higher performance, may reflect workforce stability and reduced turnover costs associated with pension compliance. Under Human Capital Theory, firms that honour statutory obligations signal commitment to employee welfare, potentially enhancing retention, morale and organisational citizenship behaviour. In Nigeria's context, where pension non-compliance remains a challenge across sectors (PenCom, 2023), consistent contributors may attract more stable, experienced workforces that drive operational continuity. This interpretation is supported by Naidoo and Yu (2020), who found that pension-compliant Nigerian manufacturers experienced 18% lower voluntary turnover and correspondingly higher asset utilisation rates.

Third, the training cost ratio shows divergent effects across performance metrics: insignificant for OPM (β = –0.033, p = 0.803) but significantly positive for EPS (β = 1.410, p = 0.001). This discrepancy suggests that training investments may not immediately boost operational efficiency, possibly due to implementation lags or measurement limitations in financial statements but do enhance bottom-line profitability and shareholder value over time. The EPS linkage aligns with the Resource-Based View: targeted skill development creates firm-specific human capital that improves decision quality, innovation capacity and strategic execution, ultimately translating to earnings growth. However, the weak OPM association may reflect Nigerian manufacturers' tendency to underreport training expenditures or prioritise short-term production over capacity building a constraint noted by Adeniji and Olaoye. (2020) in their audit of HR disclosures among NGX-listed firms.

CONCLUSION

Labour cost management exerts heterogeneous effects on corporate performance within Nigeria's listed manufacturing sector. Base salary expenses, when expressed as a proportion of revenue, consistently erode profitability, reducing both operating margins and earnings per share, highlighting the critical need to align compensation structures with productivity outcomes in an environment of thin operational margins. In contrast, statutory pension contributions correlate positively with performance across both metrics, suggesting that compliance transcends regulatory obligation to function as a strategic lever for workforce stability and reduced turnover costs. Employee training investments reveal a nuanced pattern: while showing limited immediate impact on operational efficiency, they significantly enhance earnings per share, indicating that human capital development operates as a longer-term value driver rather than a short-term cost centre. These findings underscore that labour expenditures cannot be treated monolithically. Strategic performance outcomes depend not on the aggregate level of labour spending, but on its composition and alignment with organisational capabilities. Firms that optimise salary efficiency, honour pension commitments and sustain training investments even at modest levels position themselves for superior profitability and shareholder returns in Nigeria's competitive manufacturing landscape.

RECOMMENDATIONS

Based on the empirical findings, the following recommendations are proposed for manufacturing firms, policymakers and future researchers:

i. Given the significant negative effect of salary cost ratios on profitability, firms should align compensation increases with measurable productivity gains through performance-based pay systems, output-linked incentives and regular workforce efficiency audits rather than implementing across-the-board wage increments that erode operating margins.

ii. Rather than viewing statutory pension contributions as a mere regulatory burden, management should recognise their positive association with profitability. Consistent, timely remittances to RSA accounts can enhance workforce retention, reduce recruitment costs and strengthen employer branding, ultimately supporting operational continuity in Nigeria's volatile labour market.

iii. Although training costs show limited immediate impact on operating margins, their significant positive effect on earnings per share warrants sustained commitment. Firms should design training programmes with clear links to strategic objectives and measure returns over 2–3 year horizons rather than expecting instant margin improvements.

iv. To facilitate better internal decision-making and external stakeholder confidence, firms should voluntarily disclose disaggregated labour cost data separating base salaries, statutory contributions, and training expenditures in annual reports beyond minimum IFRS requirements.

Directions for Future Studies

Future research should explore lagged effects of training expenditures to capture delayed productivity returns often missed in contemporaneous models. Mixed-methods designs combining financial data with HR records such as training hours and skill assessments, would address disclosure limitations in Nigerian financial statements. Comparative studies across banking, telecommunications and agro-processing sectors could determine whether observed labour cost–performance relationships are manufacturing-specific or economy-wide. Researchers might also examine moderating variables like firm size and technology intensity, incorporate market-based performance metrics beyond accounting ratios, and conduct longitudinal case studies to trace how labour cost strategies evolve operationally over time. Finally, investigating gender dimensions in labour cost allocation could inform more inclusive human resource policies within Nigeria's manufacturing landscape.

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