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Human Capital Investments and the Performance Paradox in Emerging Markets: A Re-examination of Training, Compensation, and Financial Outcomes in Nigerian Insurance Firms

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Abstract

Despite theoretical expectations that human capital investments should enhance organizational performance, empirical evidence from emerging markets often contradicts this premise. This study re-evaluates the relationship between human capital expenditures and firm-level financial performance within the Nigerian insurance sector. Using panel data from 21 listed insurance firms over a 12-year period (2012–2023), the study employs Estimated Generalized Least Squares (EGLS) random-effects models to assess the influence of training and development costs (TDC) and employee compensation costs (ECC) on return on assets (ROA) and net profit margin (NPM). The findings reveal that neither TDC nor ECC exerts a statistically significant impact on ROA or NPM, contradicting core propositions of human capital theory and the resource-based view. Moreover, the volume of insurance policies exhibits a significant negative relationship with NPM, suggesting operational inefficiencies associated with scale expansion. The study uncovers a "performance paradox," where substantial human capital spending does not translate into immediate financial gains. It highlights the structural, institutional, and measurement complexities that characterize developing economies and offers theoretical, managerial, and policy implications for rethinking human capital valuation and strategic alignment in the insurance industry.

Keywords: Human Resource Accounting; Insurance; Financial Performance; Training and Development; Employee Compensation; Nigeria.

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1. Introduction

Human capital has long been conceptualized as a strategic resource capable of enhancing firm productivity, innovation capacity, and market performance. Classical management theory and contemporary strategic perspectives converge on the argument that investments in skills, competencies, and employee motivation should yield superior financial outcomes (Becker, 1993; Flamholtz, 2018). In practice, however, particularly in emerging markets, human capital investments often fail to produce proportional financial returns. This disconnect poses a critical empirical and theoretical challenge.

The Nigerian insurance industry represents a unique empirical setting for exploring this paradox. It is characterized by low penetration, intense competition, regulatory-induced restructuring, and operational inefficiencies (NAICOM, 2023). Insurance firms routinely invest in employee training, regulatory compliance programs, actuarial capability enhancement, and compensation structures. Yet these expenditures, rather than being capitalized, are accounted for as immediate expenses, obscuring their long-term value and creating pressure to demonstrate short-term financial gains.

Recent empirical findings paint a fragmented picture. While some studies affirm a positive link between human capital investments and financial performance (Onyekwelu & Ironkwe, 2021), others, especially within the Nigerian context, find negligible or inconsistent outcomes (Atoyebi et al., 2024; Adegbite & Ojo, 2023). These inconsistencies underscore the need for sector-specific, data-driven inquiry.

This study addresses this gap by interrogating the relationship between human capital expenditures, measured via training and development costs (TDC) and Employee compensation costs (ECC), and two core financial performance indicators (ROA and NPM) for Nigerian insurance firms over a 12-year period.

The contribution of the study is threefold: First, it provides rigorous longitudinal evidence on the human capital–performance link in Nigeria's insurance sector. Second, it re-evaluates classical assumptions of human capital theory (HCT) and the resource-based view (RBV) in an emerging market context Third, it exposes structural and managerial misalignments that constrain the translation of human capital investments into financial outcomes.

2 Literature Review

2.1 Theoretical Framework and Hypotheses Development

2.1.1 Human Capital Theory (HCT)

Human capital theory (HCT) provides one of the most influential explanations for why organizations invest in their workforce. The theory posits that expenditures on training, education, and compensation enhance employees' knowledge, skills, and abilities, which subsequently improve their productivity and long-term value to the organization (Becker, 1993). In the context of insurance firms, these investments are particularly critical because the industry relies heavily on employees' technical competence, judgment, and ability to manage intangible products such as risk, claims, and customer relationships (Okafor & Hassan, 2019). Thus, training and development costs (TDC) are expected to build employees' analytical and operational capacity, leading to improved underwriting accuracy, faster claims handling, and better customer service delivery (Sultana, Rahman & Khanam, 2022; Otoabasi

& Akpan, 2022). Similarly, employee compensation costs (ECC) are viewed as strategic tools for motivating and retaining high-quality personnel whose tacit knowledge contributes significantly to firm performance (Adeyemo, Salami & Oni, 2024).

A fundamental assumption within HCT is that employees respond positively to training opportunities and competitive compensation. Improved skills should translate into more efficient job performance, while adequate compensation should encourage commitment and reduce turnover (Osho & Salawu, 2020). However, this chain of causality assumes that the organizational environment allows employees to apply their enhanced competencies effectively. For instance, if training is poorly aligned with job demands or compensation does not reflect performance expectations, the productivity gains anticipated by HCT may not materialize (Alam & Rizvi, 2021). The problem becomes even more pronounced when firms invest in general rather than specific skills, limiting the direct performance impact expected by the theory (Flamholtz, 2018).

Yet, these assumptions often do not hold in developing economies. Structural bottlenecks, such as inadequate technology, bureaucratic administrative processes, poorly structured work systems, and unstable macroeconomic conditions, can diminish the effectiveness of human capital investments (Ugwuja & Okoh, 2020). In the Nigerian insurance sector, regulatory pressures, low market penetration, and rising operational costs further complicate the link between employee investment and measurable financial performance (Nwankwo & Eze, 2021; NAICOM, 2023). As a result, although HCT theoretically predicts a positive association between TDC, ECC and financial performance, the actual outcomes may be weak or insignificant. This tension between theoretical expectation and contextual reality necessitates empirical testing to determine whether the theory holds in the Nigerian insurance industry.

2.1.2 Resource-Based View (RBV)

While HCT explains how human capital increases employee productivity, the Resource-Based View (RBV) offers a strategic perspective on how such investments can generate sustained competitive advantage. RBV argues that organizations achieve superior performance when they possess resources that are Valuable, Rare, Inimitable, and properly Organized—collectively referred to as the VRIO attributes (Barney, 1991). Human capital, when developed and managed effectively, can meet these conditions. For example, specialized technical skills in underwriting, actuarial modelling, and regulatory compliance represent valuable and often rare competencies in the Nigerian insurance industry, especially given the skill shortages documented in local studies (Afolabi & Udeh, 2023; Eke, Nwosu & Okafor, 2023). When firms invest in training that builds these competencies, they create knowledge that rivals cannot easily replicate, thereby strengthening their competitive position (Bullen & Eyler, 2020).

Additionally, ECC plays a strategic role in RBV by ensuring that valuable employees remain with the organization long enough for their firm-specific knowledge to accumulate and be embedded within operational routines. Compensation systems that reward performance help retain rare talent and preserve tacit knowledge that competitors cannot easily imitate (Adegbite & Ojo, 2023). However, RBV also notes that resources alone do not create competitive advantage; the firm must be sufficiently organized to harness the value of those resources (Barney, 1991). This means that training and compensation yield positive results only when accompanied by enabling organizational structures such as efficient processes, supportive leadership, and appropriate technologies.

In Nigeria, many insurance companies struggle with weak organizational systems, limited technological capabilities, fragmented performance evaluation structures, and inconsistent managerial practices (Aminu, 2023; Ilugbo, Josiah & Ozele, 2024). These weaknesses undermine the ability of firms to leverage their human capital investments effectively. As noted by Okoye and Ezejiofor (2018), even when organizations invest heavily in staff development, poor internal structures may prevent these capabilities from translating into superior performance. Thus, RBV predicts that without adequate organizational support, the expected performance benefits of TDC and ECC may not materialize, aligning with the mixed empirical results found in Nigerian insurance and financial firms (Atoyebi, Onuh & Oyebisi, 2024; Erorogha & Adesola, 2025).

2.1.3 Integration of Theories and Hypotheses Development

Together, HCT and RBV suggest that human capital investments should enhance firm performance by improving employee productivity and building sustained competitive advantage. Accordingly, Training and Development Costs (TDC) and Employee Compensation Costs (ECC) should positively influence financial outcomes such as Return on Assets (ROA) and Net Profit Margin (NPM). However, empirical studies in Nigeria show inconsistent results, with some reporting positive effects (Onyekwelu & Ironkwe, 2021; Chukwu, Osirim & Ahiakwo, 2025) and others documenting no significant or even negative relationships (Atoyebi et al., 2024; Okpolosa, 2025). This inconsistency highlights the importance of examining the interplay between theoretical expectations and contextual realities within the Nigerian insurance sector.

The theoretical propositions of HCT and RBV therefore guide the formulation of the study's hypotheses, while the contradictory empirical evidence provides the motivation for their empirical testing.

2.1.4 Hypotheses Development

Drawing from the propositions of human capital theory and the resource-based view, it is theoretically expected that investments in employee development and compensation should translate into improved firm performance. Human capital theory posits that training enhances employees' productive capacity by equipping them with updated skills, technical expertise, and behavioural competencies that contribute directly to operational efficiency and service quality (Sultana, Rahman & Khanam, 2022; Otoabasi & Akpan, 2022). In the insurance sector, improved underwriting accuracy, prompt claims administration, and better client engagement are tangible outcomes associated with well-structured training investments (Okafor & Hassan, 2019). Based on this reasoning, training and development costs (TDC) are expected to positively influence financial indicators such as return on assets (ROA) and net profit margin (NPM).

Similarly, employee compensation costs (ECC) reflect the organization's commitment to motivating and retaining its workforce. Compensation is widely acknowledged as a key determinant of employee morale, effort levels, and organizational commitment (Adegbite & Ojo, 2023). Furthermore, competitive and performance-based compensation helps retain skilled employees whose tacit knowledge, accumulated experience, and firm-specific capabilities enhance organizational productivity (Adeyemo, Salami & Oni, 2024). RBV also emphasizes that such rare and inimitable human resources, if properly supported through compensation policies, contribute to sustained competitive advantage, which should

ultimately reflect in financial performance metrics such as ROA and NPM (Bullen & Eyler, 2020; Afolabi & Udeh, 2023).

However, despite the theoretical expectation of a positive relationship, empirical studies within Nigeria's insurance and financial sectors have produced mixed or inconclusive results. Some scholars report significant positive effects of human capital investments on financial performance (Onyekwelu & Ironkwe, 2021; Chukwu, Osirim & Ahiakwo, 2025), whereas others find no short-term performance improvement despite substantial investments in training and compensation (Atoyebi, Onuh & Oyebisi, 2024; Okpolosa, 2025). These inconsistencies highlight the need for further empirical investigation, especially in an industry characterized by regulatory pressures, operational inefficiencies, and weak institutional systems that may dilute the expected benefits of human capital investment (Nwankwo & Eze, 2021; NAICOM, 2023).

In line with the theoretical positions and the need to empirically validate these assumptions within the Nigerian insurance context, the following hypotheses are formulated:

Hypotheses

H01: Training and development costs have no significant effect on return on assets of listed insurance firms in Nigeria.

H02: Employee compensation costs have no significant effect on return on assets of listed insurance firms in Nigeria.

H03: Training and development costs have no significant effect on net profit margin of listed insurance firms in Nigeria.

H04: Employee compensation costs have no significant effect on net profit margin of listed insurance firms in Nigeria.

2.3 Empirical Review

Empirical evidence on the relationship between human capital investments and firm performance has grown considerably, yet the findings remain inconsistent, particularly within developing economies. Several studies support the theoretical claim that investments in employee development and compensation enhance organizational performance. For instance, Chukwu, Osirim and Ahiakwo (2025) reported that systematic investments in staff training significantly improved employee productivity within Nigerian insurance firms. Their study highlights that when training programmes are well-designed and continuously implemented, firms experience improvements in operational efficiency and service delivery. Similarly, Adebayo, Ojo and Tella (2020) found a positive association between human capital investment and return on equity in Nigerian financial institutions, suggesting that employee development initiatives contribute to stronger financial outcomes when properly aligned with organizational goals. Additional evidence from Onyekwelu and Ironkwe (2021) reinforces this position by showing that human resource accounting disclosures, including training, compensation and employee-related expenditures, were positively linked to financial performance among listed insurance firms in Nigeria. These findings collectively affirm the theoretical propositions of Human Capital Theory that investments in employee competence and motivation generate productive and financial returns.

Conversely, a growing body of empirical work reveals weak, insignificant, or ambiguous relationships between human capital expenditures and financial performance. For example, Atoyebi, Onuh and Oyebisi (2024) found no significant short-run effect of training costs on profitability among Nigerian insurance companies. They argued that many firms focus on compliance-driven training rather than strategically targeted capacity building, thereby limiting the performance impact. Similarly, Okoye and Ezejiofor (2018) documented weak associations between human resource accounting practices and firm value, noting that the absence of standardized reporting frameworks and the treatment of human capital expenditures as period costs make it difficult for stakeholders to appreciate their long-term value. Okpolosa (2025) further observed that human capital costs did not significantly influence net profit margins in Nigerian manufacturing firms, suggesting that the impact of human capital may vary across sectors depending on industry structure, cost intensity, and operational efficiencies.

Studies focusing on the broader dimensions of human capital and organizational performance also report mixed outcomes. For instance, Adegbie, Fakile and Asaolu (2021) found that while certain aspects of human resource accounting influenced financial stability in the Nigerian insurance sector, other human capital indicators exhibited no significant effect on profitability. Erorogha and Adesola (2025) similarly demonstrated that the quality of human resource accounting disclosures was not strongly associated with net profit margin or solvency margin, implying that the benefits of human capital investments may take longer to materialize or may be overshadowed by macroeconomic factors. In the same vein, Otoabasi and Akpan (2022) concluded that although training expenditures improved employee competence, the effect on organizational performance was not immediate, largely due to lag effects and constraints within operational systems.

Other studies emphasize contextual challenges that disrupt the expected causal pathways between human capital and performance. Nwankwo and Eze (2021) pointed out that regulatory reforms, compliance demands, and high operational costs in the Nigerian insurance industry weaken the potential benefits of human capital development. Ugwuja and Okoh (2020) highlighted persistent measurement and reporting deficiencies, arguing that the lack of standardized human capital metrics makes it difficult for firms to evaluate the true financial implications of training and compensation expenditures. Furthermore, Aminu (2023) and Beida (2024) noted that weak disclosure quality and low investor awareness hinder the strategic recognition of human capital as a value-creating resource, thereby reducing managerial incentive to align human capital investments with long-term performance objectives.

Taken together, these studies reveal a fragmented empirical landscape. While some findings support the theoretical expectation that human capital investments enhance performance, others indicate no measurable or immediate financial benefit. The inconsistencies suggest that the human capital–performance relationship is highly context-dependent and susceptible to institutional, operational, and reporting challenges. These gaps underscore the need for further investigation, particularly within Nigeria's insurance sector, where structural inefficiencies, regulatory pressures, and weak organizational systems may distort the expected financial returns on human capital investments. This study therefore contributes to the empirical debate by providing updated evidence based on longitudinal data from listed Nigerian insurance firms.

3. Methodology

3.1 Research Design

This study adopts an ex-post facto research design, which is appropriate for analyzing historical financial data that cannot be manipulated by the researcher. The design enables the investigation of the relationship between human capital investments and financial performance based on already existing information disclosed in the annual reports of listed insurance firms. Consistent with prior studies in human resource accounting and financial performance (Adegbite & Ojo, 2023; Atoyebi, Onuh & Oyebisi, 2024), the design allows for objective measurement of variables over time without researcher interference.

3.2 Population, Sample Size and Sampling Technique

The population of the study consists of all twenty-one (21) insurance companies listed on the Nigerian Exchange Group as at 2023. A census sampling technique was adopted due to the manageable size of the population and the need to obtain comprehensive firm-level insights. The study covers a twelve-year period from 2012 to 2023, yielding a total of 252 firm-year observations. Annual reports and financial statements were sourced from company websites, the NGX database, and the National Insurance Commission (NAICOM) publications.

3.3 Variable Measurement

3.3.1 Dependent Variables

Return on Assets (ROA): ROA measures how efficiently management utilizes total assets to generate net income. It is computed as:

ROA = Net Income / Total Assets

This ratio is widely applied in insurance-sector studies because it reflects how effectively the firm deploys its asset base to create value (Ilugbo, Josiah & Ozele, 2024).

Net Profit Margin (NPM): NPM indicates the percentage of revenue that transforms into net profit after expenses. It is measured as:

NPM = Net Profit / Total Revenue

NPM is particularly relevant in the insurance industry where cost management, underwriting efficiency, and claims administration directly influence profitability (Erorogha & Adesola, 2025).

3.3.2 Independent Variables

Training and Development Costs (TDC):TDC represents the total annual expenditure on employee training, capacity building, and professional development initiatives. Because financial data tend to be skewed, TDC was transformed using the natural logarithm to normalize distribution and reduce heteroscedasticity, consistent with prior human capital studies (Chukwu, Osirim & Ahiakwo, 2025).

Employee Compensation Costs (ECC):ECC includes salaries, wages, allowances, benefits, and other compensation-related expenditures incurred by the firm. ECC was also log-

transformed to stabilize variance and ensure model efficiency (Adegbite & Ojo, 2023; Osho & Salawu, 2020).

3.3.3 Control Variable

Insurance Policies (IP): IP denotes the total number of insurance policies written or renewed by each firm annually. It serves as a proxy for business volume and firm operating scale. Including IP controls for variations in firm size and operational intensity, both of which may influence financial outcomes independently of human capital investments (NAICOM, 2023).

3.4 Sources of Data

The study relied exclusively on secondary data extracted from audited annual financial statements of listed insurance companies. Additional industry-level information was obtained from NAICOM market performance reports. The use of secondary data ensures objectivity and consistency in measurement, consistent with prior studies (Ilugbo, Josiah & Ozele, 2024; Onyekwelu & Ironkwe, 2021).

3.5 Method of Data Analysis

Descriptive statistics were used to summarize the central tendencies and dispersion of all variables. Diagnostic tests, including panel unit root tests and heteroskedasticity checkswere conducted to ensure data suitability for panel regression.

3.6 Model Specification

Given the longitudinal nature of the dataset and the presence of both cross-sectional and time-series observations, the study employed the Estimated Generalized Least Squares (EGLS) random-effects model. The random-effects estimator was selected based on the Hausman test, which confirmed that the random-effects model was more appropriate than the fixed-effects model ($p > 0.05$).

Model 1: Effect of human capital investments on ROA

$$ROA_{it} = \alpha 0 + \alpha 1TDC_{it} + \alpha 2ECC_{it} + \alpha 3EP_{it} + \alpha 4IP_{it} + \mu_{it}$$

Model 2: Effect of human capital investments on NPM

$$NPM_{it} = \beta 0 + \beta 1TDC_{it} + \beta 2ECC_{it} + \beta 3EP_{it} + \beta 4IP_{it} + \varepsilon_{it}$$

Where:
i = firm
t = time (year)
TDC = Training and Development Costs
ECC = Employee Compensation Costs
EP = Employee Productivity (control)
IP = Insurance Policies (control)
μ_{it}, ε_{it} = error terms

4. Results

4.1.1 Descriptive Statistics and Preliminary Analysis

Table 1 presents the descriptive characteristics of all variables used in the study. The financial performance indicators demonstrate substantial variability across firms and over time. Return on assets (ROA) has a mean value of 0.0655 (6.55%), with a wide dispersion (Std. Dev. = 0.0744), suggesting notable differences in the efficiency with which insurance

firms utilize their asset base. net profit margin (NPM) averages 63.5%, reflecting relatively strong profitability levels within the industry, although the accompanying standard deviation (0.2778) indicates that profitability is uneven across firms.

The human resource accounting variables also show considerable variation. Training and development costs (TDC) and employee compensation costs (ECC) have mean logged values of 4.6469 and 4.6858 respectively, with standard deviations close to 1. These patterns indicate that insurance firms differ significantly in the extent of their investment in employee training and remuneration. The control variable, insurance policies (IP), exhibits limited dispersion (Std. Dev. = 0.1563), suggesting a relatively stable policy volume across firms.

Table 1: Descriptive Statistics

Variable	Mean	Median	Std. Dev.	Observations
ROA	0.0655	0.0391	0.0744	252
NPM	0.6350	0.6250	0.2778	252
TDC	4.6469	4.5414	0.9921	250
ECC	4.6858	4.6460	0.9115	252
IP	6.8535	6.8775	0.1563	252

Before proceeding to regression analysis, the stationarity of all variables was assessed using panel unit root tests, which confirmed that each variable was stationary at level I(0). This validates the suitability of the panel regression approach. Diagnostic tests, including the Breusch-Pagan-Godfrey test for heteroskedasticity, indicated homoscedastic error structures across the estimated models (ROA model: $p = 0.2289$; NPM model: $p = 0.3303$). These results confirm that the data meet the required statistical assumptions for efficient EGLS estimation.

4.1.2 Hypothesis Testing

Table 2 summarizes the random-effects EGLS regression results for ROA. The overall model is statistically insignificant (F-statistic = 0.65, $p = 0.627$), indicating that the explanatory variables collectively do not meaningfully predict variations in ROA. The R-squared value (0.0105) suggests that only about 1.05% of the changes in ROA are explained by the independent variables.

Training and development costs (TDC) exhibit a positive but negligible effect (Coefficient = 0.001, $p = 0.908$), implying that training investments do not significantly influence asset-based profitability. Employee compensation costs (ECC) show a negative but insignificant association with ROA (Coefficient = –0.005, $p = 0.574$), suggesting that compensation expenses do not enhance firms' efficiency in generating returns from assets.

Given these results, H01 and H02 cannot be rejected. The findings indicate that neither training investments nor compensation expenditures have a significant effect on ROA within listed Nigerian insurance firms.

Table 2: Panel EGLS (Random Effects) Regression for ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.3165	0.2257	1.4023	0.1621
TDC	0.0010	0.0090	0.1161	0.9076
ECC	-0.0049	0.0088	-0.5632	0.5738
EP	0.0075	0.0076	0.9814	0.3274
IP	-0.0389	0.0326	-1.1949	0.2333
R-squared	0.0105			
F-statistic	0.6508			
Prob(F)	0.6268			

The regression results for NPM are presented in Table 3. Compared to the ROA model, the NPM model demonstrates slightly better explanatory power, with an R-squared value of 0.0312. Although the overall model approaches significance (F-statistic p = 0.0997), it remains statistically weak.

Training and development costs (TDC) show a positive coefficient (0.019) but remain statistically insignificant (p = 0.506). Thus, increased training investments do not translate into higher profit margins. Similarly, employee compensation costs (ECC) have a negative but insignificant relationship with NPM (Coefficient = –0.008, p = 0.782).

Accordingly, H03 and H04 cannot be rejected.A notable finding, however, is that the control variable, insurance policies (IP), exhibits a significant negative effect on NPM (Coefficient = –0.229, p = 0.021). This implies that increases in policy volume tend to reduce profit margins, possibly due to higher underwriting costs or increased claims exposure. This result highlights an important industry characteristic in which expanding market share does not automatically improve profitability.

Table 3: Panel EGLS (Random Effects) Regression for NPM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.3190	0.6966	3.3291	0.0010
TDC	0.0192	0.0289	0.6660	0.5060
ECC	-0.0076	0.0276	-0.2765	0.7824
EP	-0.0372	0.0247	-1.5030	0.1341
IP	-0.2289	0.0987	-2.3192	0.0212
R-squared	0.0312			
F-statistic	1.9700			
Prob(F)	0.0997			

4.2 Discussion of Findings

The purpose of this study was to examine the effect of human capital investments, measured through training and development costs (TDC) and employee compensation costs (ECC), on the financial performance of listed insurance firms in Nigeria. Financial performance was captured using return on assets (ROA) and net profit margin (NPM). The findings generated through random-effects EGLS estimation provide important insights into how human resource accounting variables interact with profitability dynamics within the Nigerian insurance sector.

The results indicate that neither TDC nor ECC had a statistically significant effect on ROA. Although the coefficient of TDC was positive, suggesting that training could theoretically

enhance asset-generating efficiency, the effect was negligible and statistically insignificant. Similarly, compensation expenditure exerted a negative but insignificant relationship with ROA.

These findings contrast with the expectations of human capital theory, which posits that investments in employee knowledge, skills, and motivation should enhance organizational productivity and financial outcomes (Becker, 1993). The results also diverge from several empirical studies that reported positive associations between human capital investments and firm performance. For example, Chukwu et al. (2025) found that training significantly boosted productivity in Nigerian insurance firms, while Adebayo et al. (2020) observed that human capital expenditures improved return on equity in financial institutions. Onyekwelu and Ironkwe (2021) also documented strong positive links between human resource accounting disclosures and profitability.

However, the present findings align with studies that identified weak or non-existent relationships between human capital costs and financial performance. Atoyebi et al. (2024) found no significant impact of training expenditures on short-term profitability in insurance companies, arguing that training programs are often generic, compliance-driven, or poorly aligned with strategic objectives. Okoye and Ezejiofor (2018) also reported weak associations between human capital measures and firm value, attributing the inconsistency to inadequate measurement methodologies and limited recognition of human capital as an intangible asset. The insignificant results in the present study may therefore reflect broader industry-wide challenges such as insufficient training relevance, high staff turnover, operational inefficiencies, and weak integration of human capital strategies into core business processes.

The findings for NPM similarly reveal that neither TDC nor ECC had a significant effect on profitability margins. Although the coefficient for TDC remained positive, indicating that training may contribute to revenue efficiency, the effect was not statistically meaningful. ECC continued to exhibit a negative but insignificant influence, suggesting that compensation increases may raise operational costs without necessarily enhancing profit-generating capability.

These results echo earlier findings for ROA and confirm that human capital expenditures, at least within the Nigerian insurance context, do not translate into immediate or visible improvements in profitability. As several researchers have noted, the benefits of human capital investments often manifest with a time lag, especially in industries where learning curves are long and knowledge transfer is gradual (Otoabasi & Akpan, 2022; Erorogha & Adesola, 2025). Moreover, the insurance sector is characterized by high regulatory demands, underwriting complexities, and significant cost structures, all of which may dilute the financial returns on human capital investments.

The findings again diverge from studies showing positive effects, such as Adebayo et al. (2020) and Onyekwelu and Ironkwe (2021). However, they are consistent with Okpolosa (2025), who found that human capital costs did not significantly influence profitability in manufacturing firms, suggesting that sectoral and economic conditions can moderate the expected outcomes of human capital investment. They also align with Ugwuja and Okoh (2020), who identified measurement deficiencies and weak disclosure practices as major obstacles to linking human capital to financial outcomes.

An important and notable result from the NPM model is the significant negative effect of insurance policies (IP) on profit margins. This implies that an increase in policy volume,

often associated with firm growth, actually reduces profitability for listed insurers. This finding suggests that expanding market share may be accompanied by higher underwriting costs, aggressive pricing strategies, increased claims obligations, or inefficiencies in policy administration.

This result is consistent with regulatory assessments by NAICOM (2023), which highlighted that rapid expansion in policy numbers without corresponding improvements in operational efficiency often leads to declining profitability. It also resonates with empirical concerns raised by Nwankwo and Eze (2021) that structural bottlenecks, rising claims ratios, and operational weaknesses erode the financial benefits of business expansion within the Nigerian insurance sector.

The collective findings of this study suggest that human capital investments in Nigerian insurance firms may not be strategically aligned with organizational performance goals. Several contextual factors may explain the insignificant relationships. Many training initiatives remain generic or compliance-driven rather than performance-enhancing. Insurance firms often lose trained personnel to competitors, weakening the long-term payoff of training investments. As noted by Ugwuja and Okoh (2020), inconsistent HRA metrics obscure the financial relevance of human capital. Compensation structures may not be aligned with productivity, limiting their motivational impact. Rising claims costs, regulatory compliance burdens, and market competition may overshadow the benefits of human capital spending.

Overall, these findings reinforce the notion that human capital investments alone may not improve financial performance unless supported by strong internal systems, coherent strategy execution, and structural reforms within the insurance sector.

5.1 Conclusion

This study examined the effect of human capital investments, proxied by training and development costs (TDC) and employee compensation costs (ECC), on the financial performance of listed insurance firms in Nigeria over a twelve-year period. Financial performance was measured using return on assets (ROA) and net profit margin (NPM). Using panel EGLS random-effects estimates, the study found that human capital expenditures did not exert statistically significant effects on either ROA or NPM. Although the coefficients for training were positive across models, they were not large enough to demonstrate meaningful financial impact. Compensation costs, on the other hand, showed negative but insignificant effects, suggesting rising personnel expenses that do not translate into improved profitability.

These results challenge the traditional assumptions of human capital theory and the resource-based view, which posit that strategic investments in employee capability and motivation should enhance productivity and improve financial outcomes. The findings instead suggest that within the Nigerian insurance sector, human capital investments may not be effectively aligned with organizational objectives, or they may be undermined by structural inefficiencies, high operational costs, regulatory constraints, or weak linkages between training, productivity, and rewards.

Furthermore, the study found that the volume of insurance policies issued (IP) has a significant negative effect on profit margins. This indicates that, contrary to expectations, business expansion does not necessarily lead to increased profitability. Rather, policy growth may come with higher underwriting expenses, increased claims payout, or administrative inefficiencies.

Overall, the study concludes that while human capital remains an essential driver of organizational capability, its financial benefits in the Nigerian insurance industry are neither automatic nor guaranteed. Achieving meaningful financial performance improvements requires better strategic alignment, performance-driven training, and more efficient operational systems.

5.2 Recommendations

Insurance firms should re-align training programs toward strategic, job-specific skills that enhance underwriting, claims processing, and risk management, while adopting performance-based compensation systems that directly reward productivity and service quality. To improve decision-making, companies should strengthen human capital measurement and standardized reporting frameworks, supported by effective retention strategies that preserve valuable tacit knowledge. Enhancing operational efficiency through digital automation and streamlined processes is also essential, given the negative effect of policy volume on profitability. Furthermore, firms should integrate human capital investments into their overall corporate strategy to ensure coherence between employee development and organizational goals, while regulators such as NAICOM and FRCN should establish clearer guidelines for human resource accounting disclosures to improve transparency and comparability across the insurance industry.

5.2.1 Future Research Directions

Subsequent studies may incorporate additional human capital variables such as employee experience, turnover rates, productivity metrics, digital competencies, and managerial quality. Longitudinal mixed-method research could also shed light on how organizational culture and leadership mediate the human capital–performance relationship.

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