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From Human Capital Investment to Shareholder Value: Explaining the Disconnect in Nigeria's Insurance Industry

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Abstract

Despite the growing recognition of human capital as a critical driver of competitiveness in service-oriented industries, evidence from developing economies suggests that investments in employees do not always translate into improved shareholder value. This study examines this paradox within the Nigerian insurance sector by analysing whether employee productivity and human capital expenditures generate measurable returns for shareholders. Using panel data from 21 insurance companies listed on the Nigerian Exchange Group over the period 2012–2023 (252 firm-year observations), the study applies Panel EGLS random-effects estimation to assess the influence of employee productivity and training and development costs on return on equity and return on investment. The findings reveal a persistent disconnect between human capital inputs and financial outcomes. Employee productivity shows no statistically significant relationship with either return on equity or return on investment, while training and development costs similarly fail to exert significant effects. The models exhibit very low explanatory power, indicating that gains in workforce capability are not effectively transmitted to shareholder returns. The study contributes evidence from a developing insurance market, challenging the assumed linear relationship between human capital investment and financial performance. It concludes that Nigerian insurers face structural and strategic constraints that prevent human capital investments from being efficiently converted into shareholder value, underscoring the need for improved alignment between human resource strategies, operational efficiency, and financial performance objectives.

Keywords: Human Capital Accounting, Employee Productivity, Return on Equity, Return on Investment, Insurance Industry, Financial Performance, Nigeria.

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1. Introduction

The insurance industry worldwide is increasingly shaped by digital innovation, regulatory complexity, and heightened customer expectations (Khan et al. 2020). Within this environment, intangible assets, particularly human capital, have emerged as central determinants of organisational performance and long-term sustainability. Unlike capital-intensive manufacturing industries, insurance firms rely heavily on employee expertise in underwriting, risk evaluation, claims administration, and customer relationship management (Okafor & Hassan, 2019). Consequently, workforce competence and productivity constitute the core drivers of service quality and competitive advantage.

Human Resource Accounting (HRA) developed in response to this reality, advocating for the systematic recognition and measurement of investments in employees as strategic assets rather than discretionary expenses (Flamholtz, 2018; Bullen & Eyler, 2020). Rooted in human capital theory, HRA assumes that expenditures on training, development, and compensation enhance employee productivity and ultimately yield superior financial returns (Becker, 1964; Schultz, 1961). In theory, these returns should be reflected in improved profitability and stronger shareholder outcomes.

The Nigerian insurance sector presents a particularly compelling context for examining this assumption. Although the industry plays a vital role in financial intermediation and risk management, it continues to struggle with low penetration rates, intense competition, regulatory pressures, and weak public confidence (NAICOM, 2023). To remain viable, insurers increasingly invest in staff training, professional certification, and compensation packages aimed at attracting and retaining skilled personnel, especially in response to IFRS 17 implementation and rapid InsurTech adoption (Okafor et al. 2022).

However, despite sustained expenditure on human capital, the sector has recorded uneven financial performance, raising questions about the efficiency with which these investments are converted into shareholder value. Accounting standards further complicate this issue, as IFRS requires most human capital-related expenditures to be expensed immediately, thereby reducing reported profits in the short term (Nwankwo & Eze, 2021). This treatment obscures the long-term value of human capital and may weaken managerial incentives to pursue sustained capability development.

Empirical evidence on the human capital–performance relationship within Nigeria remains inconclusive. While some studies report positive associations between human capital investments and profitability (Adebayo et al., 2020; Chukwu et al., 2025), others find weak or insignificant effects, particularly in the short run (Atoyebi et al., 2024; Onyekwelu & Ironkwe, 2021). Many existing studies focus on aggregate financial performance measures or employee-level outcomes, with limited emphasis on shareholder-oriented indicators such as return on equity and return on investment.

Against this backdrop, this study advances the argument that a “leakage” exists between human capital investment and shareholder returns in the Nigerian insurance industry. That is, while resources are committed to improving employee capability and productivity, the expected financial benefits fail to materialise at the level of shareholder value. Accordingly, the study seeks to examine the direct effects of employee productivity, training and development costs, and employee compensation costs on return on equity and return on investment among quoted Nigerian insurance firms.

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2. Literature Review and Hypothesis Development

2.1 Theoretical Foundations

The relationship between human capital and firm performance is anchored primarily in human capital theory and the resource-based view (RBV) of the firm. These theories provide complementary explanations for why investments in employees are expected to enhance organisational performance and shareholder value, particularly in knowledge-intensive service industries such as insurance.

2.1.1 Human Capital Theory

Human capital theory was formally developed by Schultz (1961) and later expanded by Becker (1964), who conceptualised education, training, skills, and experience as forms of capital embedded in individuals. According to this theory, expenditures on human resources are not merely consumption costs but long-term investments that increase workers' productivity and earning capacity. At the organisational level, such investments are expected to improve operational efficiency, innovation capability, and service quality, thereby enhancing firm profitability.

Becker (1964) argued that organisations that allocate resources to employee training and development are likely to benefit from higher productivity and reduced inefficiencies over time. Similarly, Schultz (1961) maintained that investments in human capital contribute significantly to economic growth by improving the quality of labour input. In service-oriented sectors such as insurance, where output quality depends heavily on employee judgment, expertise, and customer interaction, human capital investments are particularly critical.

From a financial performance perspective, human capital theory suggests that firms that invest effectively in employee training, development, and compensation should experience improved financial outcomes, including higher returns on equity and better utilisation of invested capital. However, the theory also implicitly assumes that organisations possess the necessary structures and systems to convert enhanced employee capability into measurable financial returns.

2.1.2 Resource-Based View of the Firm

The resource-based view (RBV), popularised by Barney (1991), extends the human capital argument by emphasising the strategic role of internal firm resources in achieving sustained competitive advantage. According to RBV, firm performance differences arise from resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Human capital—manifested in employee skills, experience, firm-specific knowledge, and organisational culture—meets these criteria when it is effectively developed and deployed.

Barney (1991) argued that while physical and financial assets can be acquired or replicated by competitors, firm-specific human capital is socially complex and path-dependent, making it difficult to imitate. In the insurance industry, underwriting expertise, risk assessment capabilities, claims management competence, and customer relationship skills are deeply embedded in employees and organisational routines. As such, a productive and well-managed workforce constitutes a strategic asset capable of generating superior financial performance.

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The RBV further posits that human capital alone is insufficient to drive performance unless it is aligned with organisational strategy and supported by appropriate systems and processes. This implies that the financial benefits of human capital investments depend not only on the level of expenditure but also on how effectively these resources are integrated into the firm's operational and strategic framework.

Although human capital theory and the resource-based view provide strong conceptual justification for expecting a positive relationship between human capital investment and shareholder value, they do not fully account for contextual and institutional constraints that may weaken this relationship in practice. In developing economies, factors such as weak organisational systems, inadequate technology, misaligned incentive structures, regulatory pressures, and unfavourable macroeconomic conditions may prevent productivity gains from translating into improved financial performance (Becker, 1993; Barney, 2001).

Consequently, while theory predicts that investments in employee productivity, training, and compensation should enhance firm performance, empirical outcomes may differ depending on how effectively firms convert human capital inputs into financial outputs. This theoretical gap underscores the need for empirical investigation into whether the expected link between human capital investment and shareholder returns holds within the specific context of the Nigerian insurance industry.

2.2 Conceptual Framework

The conceptual framework of this study is developed to explain the relationships between key dimensions of human capital investment and shareholder-oriented financial performance indicators in the Nigerian insurance industry. Specifically, the framework links employee productivity and training and development costs as measures of human capital investment to return on equity (ROE) and return on investment (ROI) as indicators of shareholder value. The framework is grounded in human capital theory and the resource-based view, which posit that investments in employee capability should enhance organisational efficiency and financial performance when effectively managed.

2.2.1 Employee Productivity

Employee productivity refers to the efficiency with which employees transform organisational inputs into outputs and is commonly measured as revenue or value added per employee (Davenport, 1999). In service-oriented industries such as insurance, productivity is closely associated with employees' technical expertise, decision-making ability, and customer-handling skills. Higher productivity implies that employees are generating greater output relative to their cost, which should, in principle, improve profitability and enhance returns to shareholders.

Empirical studies suggest that employee productivity plays a critical role in determining firm-level financial performance, particularly in knowledge-intensive sectors (Huselid, 1995; Crook et al., 2011). In insurance firms, productive employees contribute to improved underwriting accuracy, efficient claims processing, and stronger customer relationships, all of which are essential for revenue growth and cost control. Accordingly, increased employee productivity is expected to positively influence both return on equity and return on investment. However, the extent to which productivity gains translate into shareholder returns may depend on complementary factors such as technology adoption, organisational structure, and cost management efficiency.

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2.2.2 Training and Development Costs

Training and development costs represent direct organisational investments aimed at enhancing employee skills, knowledge, and competencies. Such investments are intended to improve employee performance, adaptability, and innovation capacity, thereby strengthening the firm's competitive position (Becker, 1964). In the insurance industry, training is particularly important due to frequent regulatory changes, evolving risk management practices, and the growing application of digital technologies.

From a conceptual standpoint, training and development expenditures are expected to increase employee productivity and service quality, which should ultimately improve firm profitability and shareholder returns (Noe et al., 2020). However, prior research indicates that the financial benefits of training may not materialise immediately, as returns often occur over the long term and depend on the relevance and effectiveness of training programmes (Bartel, 1994). In contexts where training is poorly aligned with strategic objectives or inadequately reinforced, training costs may function more as expenses than as value-creating investments.

Within this framework, training and development costs are conceptualised as a key explanatory variable influencing return on equity, reflecting the extent to which human capital investments enhance shareholders' returns through improved organisational performance.

2.2.3 Return on Equity

Return on equity (ROE) is a widely used indicator of shareholder value, measuring the efficiency with which a firm generates profit from shareholders' equity (Brigham &Ehrhardt, 2017). It reflects management's ability to utilise owners' funds to produce earnings and is therefore of central importance to investors. A higher ROE indicates more effective deployment of equity capital and stronger financial performance.

In the context of this study, ROE is used to capture the extent to which human capital investments, particularly employee productivity and training expenditures, translate into returns for equity holders. The conceptual framework assumes that improvements in workforce capability and efficiency should enhance profitability, thereby increasing ROE. Nevertheless, external pressures, cost inefficiencies, and accounting treatment of human capital expenditures may weaken this relationship, especially in developing economies.

2.2.4 Return on Investment

Return on investment (ROI) measures the efficiency with which invested resources generate net returns and is commonly used to assess the effectiveness of specific investments (Ross, Westerfield, & Jordan, 2019). In this study, ROI is employed to evaluate how efficiently investments in human capital, especially employee productivity and compensation-related expenditures, are converted into financial gains.

Conceptually, higher employee productivity and effective compensation structures should improve ROI by ensuring that the benefits derived from human capital exceed the costs incurred. However, if compensation is not performance-linked or if productivity gains are absorbed by high operating costs, ROI may remain low or insignificant. Thus, ROI provides an additional lens through which the effectiveness of human capital investments can be assessed from a shareholder perspective.

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2.3 Hypothesis Development

Drawing on theoretical expectations and the mixed empirical evidence, this study proposes the following hypotheses:

H1: Employee productivity has a significant positive effect on return on equity.

H2: Employee productivity has a significant positive effect on return on investment.

H3: Training and development costs have a significant positive effect on return on equity.

H4: Training and development costs have a significant positive effect on return on investment.

These hypotheses are tested to determine whether the expected pathway from human capital investment to shareholder value holds in the Nigerian insurance context.

2.2 Empirical Review

Empirical studies examining the relationship between human capital and firm performance present mixed and often context-dependent findings, particularly within financial services and insurance industries. While some scholars report positive effects of human capital investment on firm profitability and efficiency, others find weak or insignificant relationships, especially when shareholder-oriented performance indicators are employed.

Several empirical studies support the argument that investment in employee training and productivity enhances organisational performance. Huselid (1995) demonstrated that effective human resource management practices, including training and skill development, significantly improved productivity and corporate financial performance in U.S. firms. Similarly, Bartel (1994) found that employee training programmes were associated with measurable productivity gains, suggesting that human capital investments can yield tangible performance benefits when properly implemented. In a broader meta-analysis, Crook et al. (2011) confirmed a positive relationship between human capital and firm performance, particularly in knowledge-intensive sectors.

Evidence from developing economies and African financial markets also highlights the potential performance benefits of human capital investment. For example, Oppong et al. (2022) found that human capital efficiency significantly improved productivity among insurance firms in Ghana. In Nigeria, Onyekwelu and Ironkwe (2021) reported that human resource accounting disclosure was positively associated with financial performance indicators among listed insurance companies, suggesting that attention to human capital may enhance organisational outcomes. These studies indicate that improved employee capability can enhance underwriting quality, operational efficiency, and service delivery, factors that are central to insurance firm performance.

However, a contrasting body of empirical evidence reveals weak or insignificant relationships between human capital expenditure and financial performance, particularly when performance is measured using shareholder-focused metrics such as return on equity and return on assets. In the Nigerian insurance sector, Atoyebi et al. (2024) found that while salaries and employee benefits significantly influenced profit before tax, training and development costs had no significant short-term effect on financial performance. Similarly,

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Onyekwelu and Ironkwe (2021) observed that high staff-related costs could, in some cases, exert a negative influence on profitability, suggesting inefficiencies in the utilisation of human capital investments.

These mixed findings suggest that the benefits of human capital investment may be subject to time lags, contextual constraints, and managerial effectiveness. Bartel (2000) argued that training investments often generate returns over the long term rather than immediately, implying that short-run financial measures may fail to capture their full impact. Moreover, Becker (1993) emphasised that human capital investments yield positive returns only when supported by appropriate organisational systems and incentives.

Several explanations have been advanced for the observed disconnect between human capital investment and shareholder value. Ineffective or generic training programmes that are poorly aligned with organisational strategy may fail to enhance relevant skills (Noe et al., 2020). Limited technological infrastructure and rigid organisational structures may also constrain employees' ability to translate improved skills into higher productivity (Barney, 2001). Furthermore, compensation systems that are weakly linked to performance may function largely as fixed costs rather than as drivers of efficiency and value creation (Jensen & Murphy, 1990). In addition, macroeconomic volatility and regulatory pressures in developing economies may absorb productivity gains, thereby limiting their transmission to shareholder returns.

Overall, the empirical literature reveals no consensus on the direct relationship between human capital investment and financial performance, particularly within the insurance sector of developing economies. This inconsistency underscores the need for further empirical investigation using firm-level longitudinal data and shareholder-oriented performance measures, as undertaken in this study.

3. Methodology

3.1 Research Design

This study adopts a quantitative longitudinal research design based on secondary panel data. A longitudinal approach is appropriate because it enables the examination of variations in firm behaviour and performance over time while controlling for unobserved firm-specific heterogeneity (Baltagi, 2008). Panel data analysis is particularly suitable for financial performance studies, as it improves estimation efficiency and reduces the risk of biased results associated with purely cross-sectional or time-series designs (Hsiao, 2014).

3.2 Population and Sample

The population of the study consists of all insurance companies listed on the Nigerian Exchange Group (NGX) during the study period. A census sampling technique is employed, covering the entire population of 21 quoted insurance firms. The choice of a census approach eliminates sampling bias and ensures that the findings are representative of the Nigerian listed insurance sector as a whole (Gujarati & Porter, 2009).

The study covers a 12-year period from 2012 to 2023, resulting in 252 firm-year observations. The selected period captures both pre- and post-IFRS convergence effects and reflects significant regulatory and operational changes within the Nigerian insurance industry.

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3.3 Sources of Data

Data were obtained exclusively from published annual reports and financial statements of the sampled insurance companies. These reports were accessed through company websites and the Nigerian Exchange Group platform. The use of audited annual reports ensures data reliability, consistency, and comparability across firms and time (Brigham &Ehrhardt, 2017).

3.4 Measurement of Variables

3.4.1 Dependent Variables

Shareholder value is proxied using two widely accepted financial performance indicators:

Return on Equity (ROE): measured as net profit after tax divided by shareholders' equity. ROE captures the efficiency with which management utilises owners' funds to generate earnings and is a key metric of investor interest (Ross, Westerfield, & Jordan, 2019).

Return on Investment (ROI): measured as net returns relative to total investment costs. ROI reflects the effectiveness with which invested resources are converted into financial gains and is commonly used to assess investment efficiency (Brigham & Ehrhardt, 2017).

3.4.2 Independent Variables

Human capital investment is captured using the following variables:

Employee Productivity (EP): measured as total revenue divided by the number of employees. This ratio reflects the average output generated per employee and is commonly used as a proxy for workforce efficiency in service industries (Huselid, 1995).

Training and Development Costs (TDC): measured as total annual expenditure on employee training and development as disclosed in firms' financial statements. Training expenditure is widely recognised as a direct investment in human capital (Becker, 1964).

To address potential heteroscedasticity and scale differences among firms, all independent variables are log-transformed, a practice commonly adopted in firm-level financial studies (Gujarati & Porter, 2009).

3.5 Model Specification

To examine the relationship between human capital investment and shareholder value, two panel regression models are specified:

$$ROE_{it}=\alpha_0+\beta_1 EP_{it}+\beta_2 TDC_{it}+ \mu_{it}$$
$$ROI_{it}=\alpha_0+\beta_1 EP_{it}+\beta_2 TDC_{it}+ \mu_{it}$$

Where:
ROEit represents return on equity of firm i in year t. It measures the efficiency with which a firm generates profit from shareholders' equity and serves as a key indicator of shareholder value. ROIit denotes return on investment of firm i in year t. It reflects the effectiveness with which the firm converts invested resources into net financial returns and captures overall investment efficiency. EPit stands for employee productivity of firm i in year t, measured as total revenue divided by the number of employees. This variable captures workforce efficiency and the extent to which employees contribute to value creation within the firm. TDCit represents training and development costs incurred by firm i in year t. It measures the level of financial investment devoted to enhancing employees' skills, competencies, and professional capabilities. In the empirical estimation, this variable is log-transformed to

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reduce scale effects and improve normality. α0 is the intercept term, representing the expected value of the dependent variable when all explanatory variables are held constant at zero. β1 and β2 are the slope coefficients, indicating the magnitude and direction of the effect of employee productivity and training and development costs, respectively, on the dependent variables. μit is the stochastic error term, which captures the influence of unobserved factors that vary across firms and over time and are not explicitly included in the model. i is indexes for the individual firms, while t denotes the time period.

3.6 Estimation Technique

The study employs Panel Estimated Generalized Least Squares (EGLS) random-effects regression for parameter estimation. Panel EGLS is suitable where error variances differ across cross-sectional units and time, and where unobserved firm-specific effects are assumed to be randomly distributed (Baltagi, 2008).

The choice between fixed-effects and random-effects estimators is guided by the Hausman specification test. The Hausman test results indicate that the random-effects model is appropriate, as the null hypothesis of no systematic difference between fixed and random effects could not be rejected (Hausman, 1978). Consequently, the random-effects estimator provides efficient and consistent parameter estimates.

4. Results and Discussion

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics of the study variables, highlighting the central tendencies and dispersion of financial performance and human capital indicators among listed Nigerian insurance firms. The mean return on equity (ROE) of 0.1136 indicates that, on average, insurance firms generated approximately 11.36 kobo of profit for every naira of shareholders' equity during the study period. However, the relatively high standard deviation (0.1311) suggests substantial variation in equity returns across firms and over time. This dispersion reflects heterogeneity in operational efficiency, risk management practices, and capital utilisation within the industry. The wide gap between the minimum (0.0010) and maximum (0.7623) ROE further underscores the uneven performance of insurance firms, with some firms barely breaking even while others achieved exceptionally high returns.

Table 1: Descriptive Statistics of Study Variables

Variable	Mean	Std. Dev.	Minimum	Maximum
ROE	0.1136	0.1311	0.0010	0.7623
ROI	0.0379	0.0784	0.0002	0.7328
EP	4.5822	1.0346	0.0000	7.9361
TDC	4.6469	0.9921	1.3010	8.1857

Return on investment (ROI) exhibits a much lower mean value of 0.0379, implying that investment efficiency in the sector is generally weak. On average, firms earned less than 4 kobo on every naira invested, which raises concerns about the effectiveness of capital deployment in the Nigerian insurance industry. The relatively large standard deviation (0.0784), coupled with the wide range between the minimum (0.0002) and maximum (0.7328), indicates that while a few firms managed to generate substantial investment returns, the majority struggled to convert investments into meaningful financial gains. This pattern is consistent with the structural and competitive challenges facing the sector.

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Employee productivity (EP) records a mean value of 4.5822, suggesting moderate revenue generation per employee across the sampled firms. The standard deviation of 1.0346 indicates noticeable variation in workforce efficiency, reflecting differences in skill levels, technology adoption, and organisational processes. The presence of a zero minimum value points to periods or firms where productivity was severely constrained, possibly due to operational disruptions or reporting limitations, while the maximum value of 7.9361 indicates that some firms achieved relatively high productivity levels.

Training and development costs (TDC) show a mean value of 4.6469, with a standard deviation of 0.9921, indicating that insurance firms consistently invested in employee training over the study period, albeit at varying intensities. The wide range between the minimum (1.3010) and maximum (8.1857) values suggests substantial differences in training commitment across firms, possibly reflecting divergent strategic priorities or resource constraints.

4.2 Panel EGLS Random Effects Regression Results (Dependent Variable: ROE)
Model 1: The Effect of EP and TDC on ROE

Table 2: Regression Results for ROE Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.3576	0.3963	0.9023	0.3678
EP	0.0198	0.0130	1.5195	0.1299
TDC	-0.0062	0.0155	-0.4016	0.6884
R-squared = 0.01665	F-statistic = 1.037 (p = 0.3887)			

Table 2 reports the Panel EGLS random-effects regression results examining the effect of employee productivity and training and development costs on return on equity. The coefficient of employee productivity (EP) is positive (0.0198), implying that increases in workforce productivity are associated with higher ROE. This direction of relationship aligns with theoretical expectations from Human Capital Theory and the Resource-Based View, which posit that a more productive workforce should enhance firm profitability and shareholder returns.

However, the relationship between employee productivity and ROE is not statistically significant at conventional levels ($p = 0.1299$). This lack of significance suggests that although productivity improvements may exist, they do not translate into measurable gains in equity returns within the study period. This finding indicates a possible absorption of productivity gains by other operational inefficiencies, high operating costs, or competitive pricing pressures that prevent benefits from reaching shareholders.

Training and development costs (TDC) exhibit a negative coefficient (–0.0062), indicating an inverse relationship with ROE, although this effect is statistically insignificant ($p = 0.6884$). This result suggests that training expenditures, in their current form, do not contribute to improved equity returns and may even exert short-term downward pressure on profitability due to their immediate expensing under prevailing accounting standards. The insignificance of TDC implies the presence of time lags, ineffective training content, or weak alignment between training initiatives and strategic performance objectives.

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The overall explanatory power of the model is very low (R^2 = 0.0167), indicating that employee productivity and training costs jointly explain less than 2% of the variations in ROE. The insignificant F-statistic (p = 0.3887) further confirms that the model lacks overall statistical significance. These results collectively point to a weak transmission mechanism between human capital investments and shareholder equity returns in the Nigerian insurance sector.

4.3 Panel EGLS Random Effects Regression Results (Dependent Variable: ROI)

Model 1: The Effect of EP and TDC on ROI

Table 3: Regression Results for ROI Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.2099	0.2413	0.8696	0.3853
EP	-0.0008	0.0082	-0.0970	0.9228
TDC	-0.0011	0.0094	-0.1161	0.9077
R-squared = 0.00660	F-statistic = 0.407 (p = 0.8034)			

Table 3 presents the regression results for the model examining the effect of employee productivity and training and development costs on return on investment. Unlike the ROE model, employee productivity (EP) exhibits a negative coefficient (–0.0008), suggesting that increases in productivity are marginally associated with lower ROI. However, this relationship is statistically insignificant (p = 0.9228), indicating that employee productivity has no meaningful explanatory power with respect to investment efficiency in the sampled firms.

TDC also display a negative coefficient (–0.0011) and are statistically insignificant (p = 0.9077). This finding suggests that higher expenditure on employee remuneration does not improve the efficiency with which investments are converted into returns. Instead, compensation costs appear to function largely as fixed operating expenses rather than as performance-enhancing incentives. This outcome may reflect weak performance-linked pay structures or misaligned compensation policies within the industry.

The model's R^2 value of 0.0066 indicates extremely low explanatory power, with less than 1% of the variation in ROI explained by the included variables. The F-statistic is also insignificant (p = 0.8034), confirming that the model does not provide a statistically meaningful explanation of investment returns. These results reinforce the notion that human capital variables, as currently structured and managed, are not key drivers of investment efficiency in Nigerian insurance firms.

4.4 Discussion of Findings

This study examined the extent to which human capital investments translate into shareholder value in the Nigerian insurance industry, focusing on employee productivity, training and development costs, and employee compensation costs as explanatory variables, and return on

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equity (ROE) and return on investment (ROI) as performance measures. The findings reveal a consistent pattern of weak and statistically insignificant relationships between human capital variables and shareholder returns, suggesting the existence of a structural disconnect in the human capital–performance transmission mechanism within the sector.

Hypothesis one (H1) proposed that employee productivity has a significant positive effect on return on equity. Although the regression coefficient of employee productivity in the ROE model is positive, the relationship is not statistically significant. This result implies that improvements in workforce productivity do not translate into higher equity returns for shareholders of Nigerian insurance firms during the study period.

Theoretically, this finding contradicts the expectations of human capital theory, which posits that increased employee productivity should enhance organisational profitability and, by extension, shareholder value (Becker, 1964; Schultz, 1961). Similarly, the resource-based view suggests that a productive workforce constitutes a valuable strategic resource capable of generating superior returns (Barney, 1991). However, the empirical outcome of this study suggests that productivity gains may be absorbed by inefficiencies elsewhere in the organisational system before reaching equity holders.

This finding aligns with the results of Onyekwelu and Ironkwe (2021), who reported that staff-related costs and productivity measures did not significantly improve profitability among Nigerian insurance firms. It is also consistent with Bartel (2000), who argued that productivity improvements often yield financial benefits only over the long term and may not be captured by short-run accounting performance indicators such as ROE. Conversely, the result contradicts studies such as Huselid (1995) and Crook et al. (2011), which found significant positive effects of employee productivity on firm performance in more developed and structurally efficient markets.

The divergence may be explained by contextual factors unique to the Nigerian insurance industry, including high operating costs, intense price competition, weak technological infrastructure, and inefficient capital utilisation. These constraints may prevent productivity improvements from enhancing net income relative to shareholders' equity.

Hypothesis two (H2) stated that employee productivity has a significant positive effect on return on investment. The empirical results reveal a negative and statistically insignificant relationship between employee productivity and ROI. This outcome suggests that increases in productivity do not improve the efficiency with which investments are converted into financial returns.

This finding further weakens the assumption that human capital efficiency automatically enhances financial performance. While productivity gains may increase output, they may simultaneously require higher expenditure on technology, compliance, and operational support, thereby neutralising their net effect on investment returns. This result is consistent with Jensen and Meckling's (1976) agency theory perspective, which suggests that without effective monitoring and incentive alignment, productivity gains may not translate into shareholder wealth.

Empirically, the result supports the findings of Atoyebi et al. (2024), who observed that productivity-related expenditures in Nigerian insurance firms had limited influence on investment efficiency. However, it contradicts evidence from Oppong et al. (2022), who reported that human capital efficiency significantly improved productivity and performance

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in Ghanaian insurance firms. The contrast suggests that institutional and regulatory differences across markets may shape the effectiveness of productivity gains in driving investment returns.

Hypothesis three (H3) posited that training and development costs have a significant positive effect on return on equity. The results indicate a negative and statistically insignificant relationship between training expenditure and ROE, leading to the rejection of H3. This finding implies that training investments do not improve shareholders' equity returns in the short run.

This outcome is consistent with prior studies that highlight the delayed nature of training benefits. Bartel (1994) and Becker (1993) noted that returns on training investments often materialise over extended periods and depend on the relevance and quality of training programmes. In the Nigerian insurance context, training may be generic or compliance-driven rather than strategically targeted at performance-critical competencies such as underwriting accuracy, claims efficiency, and risk pricing.

The finding corroborates Atoyebi et al. (2024), who reported that training and development costs had no significant effect on financial performance among listed Nigerian insurance firms. It also aligns with Onyekwelu and Ironkwe (2021), who observed that training expenditures did not significantly improve profitability measures. However, it contradicts Adebayo et al. (2020), who found a positive relationship between training investment and ROE in the broader Nigerian financial sector.

The inconsistency suggests that the effectiveness of training investments may vary across financial subsectors. In insurance, weak post-training evaluation mechanisms, limited technological support, and high employee turnover may dilute the impact of training on equity returns.

Hypothesis Four (H4) proposed that training and development costs have a significant positive effect on return on investment. However, the empirical results reveal a negative and statistically insignificant relationship between training and development costs and return on investment, leading to the rejection of H4. This finding suggests that expenditure on employee training does not improve investment efficiency among Nigerian insurance firms within the period under review.

This outcome implies that training initiatives in the sector may not be sufficiently aligned with performance-enhancing objectives. When training programmes are generic, compliance-driven, or poorly evaluated, they may increase operating costs without generating commensurate productivity or financial gains. Becker (1993) emphasised that returns on training investments depend heavily on their relevance, quality, and integration with organisational strategy. In the absence of effective post-training utilisation and performance monitoring, training costs may function largely as short-term expenses rather than as value-creating investments.

Empirically, this result is consistent with the findings of Atoyebi et al. (2024), who reported that training and development expenditure had no significant effect on financial performance among listed Nigerian insurance firms. It also aligns with Onyekwelu and Ironkwe (2021), who observed that staff-related expenditures, including training costs, did not translate into improved profitability. However, the finding contradicts evidence from Huselid (1995) and Bartel (1994), who documented significant performance improvements associated with well-

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structured training programmes in more developed and institutionally efficient markets. The divergence highlights the importance of contextual and organisational factors in determining whether training investments yield meaningful financial returns.

Taken together, the findings across all four hypotheses provide strong evidence of a structural disconnect between human capital investment and shareholder value creation in the Nigerian insurance industry. While human capital theory and the resource-based view predict positive performance outcomes from investments in employee productivity, training, and compensation, the empirical evidence from this study suggests that these benefits are not automatically realised.

The results indicate that human capital investments in Nigerian insurance firms may be undermined by institutional inefficiencies, weak governance structures, inadequate technology, and misaligned incentive systems. As a result, productivity gains and human capital expenditures are absorbed within the operational system rather than transmitted to shareholders in the form of higher ROE and ROI.

The discussion highlights the need for Nigerian insurance firms to move beyond increasing human capital expenditure toward improving the effectiveness and strategic alignment of such investments. Training programmes should be linked explicitly to performance-critical outcomes, while compensation systems should incorporate stronger performance-based components. Regulators and policymakers may also need to encourage improved disclosure and evaluation of human capital investments to enhance accountability and efficiency within the sector.

5. Conclusion and Recommendations

5.1 Conclusion

This study examined the relationship between human capital investment and shareholder value in the Nigerian insurance industry, focusing specifically on employee productivity, training and development costs, and shareholder-oriented performance indicators, return on equity (ROE) and return on investment (ROI). Using longitudinal panel data from 21 insurance companies listed on the Nigerian Exchange Group over the period 2012–2023, the study provides robust empirical evidence on whether investments in human capital translate into improved financial outcomes for shareholders.

The findings reveal a consistent pattern of weak and statistically insignificant relationships between human capital variables and shareholder returns. Employee productivity, although theoretically expected to enhance financial performance, was found to have no significant effect on either ROE or ROI. Similarly, training and development costs did not exert a significant influence on shareholder returns. These results suggest that human capital investments, as currently structured and managed within Nigerian insurance firms, do not automatically generate measurable financial benefits for shareholders.

The study therefore challenges the straightforward application of human capital theory and the resource-based view in the context of a developing insurance market. While human capital remains central to service delivery in the insurance industry, the results indicate that structural inefficiencies, weak technological infrastructure, misaligned incentive systems, and institutional constraints may prevent productivity gains and training investments from being effectively converted into shareholder value. Overall, the findings point to the existence of a

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"leaky pipeline" between human capital investment and financial performance in the Nigerian insurance sector.

5.2 Recommendations

Based on the empirical findings and their implications, the study makes the following recommendations for managers, policymakers, and regulators in the Nigerian insurance industry:

i. Insurance firms should redesign training and development programmes to align more closely with strategic performance objectives. Training initiatives should focus on skills that directly influence underwriting accuracy, claims efficiency, risk pricing, and customer retention. Firms should also implement systematic post-training evaluation mechanisms to assess the financial impact of training investments over time.

ii. Employee productivity improvements should be supported by enabling organisational structures, modern technology, and efficient operational processes. Without these complementary factors, productivity gains are likely to be absorbed by inefficiencies rather than translated into improved financial performance. Management should therefore integrate human capital strategies with broader operational and digital transformation initiatives.

iii. Given the limitations of traditional accounting treatment of human capital expenditures, insurance firms should adopt enhanced internal human capital reporting frameworks. Such frameworks can help track the causal relationship between human capital investments and financial outcomes, thereby improving managerial decision-making and accountability.

iv. Regulatory bodies such as the National Insurance Commission (NAICOM) should encourage improved disclosure of human capital investments and their performance implications. Industry-wide guidelines on human capital development and reporting could enhance transparency and promote best practices across the sector.

5.3 Contribution to Knowledge and Directions for Future Research

This study contributes to the growing literature on human capital and financial performance by providing firm-level evidence from a developing insurance market. It highlights the limitations of assuming a direct and immediate link between human capital investment and shareholder value, particularly in environments characterised by structural and institutional constraints.

Future research could extend this study by incorporating qualitative measures of training quality, employee skill utilisation, and organisational culture. Researchers may also explore the moderating roles of technology adoption, corporate governance, and risk management practices in shaping the human capital–performance relationship. Additionally, longer time horizons and alternative performance measures may provide further insight into the dynamic effects of human capital investment on firm performance.

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