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Research Article

The Impact of Human Capital Investment on the Financial Performance of Selected BSE-Listed Companies

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Abstract

This study explores the impact of Human Capital Investment (HCI) on the financial performance of the top 25 companies listed on the Bombay Stock Exchange (BSE) over a ten-year period from 2014-15 to 2023-24. Financial performance is measured using three key indicators: Return on Assets (ROA), Return on Equity (ROE), and Return on Capital Employed (ROCE). Using regression and correlation analysis, the study identifies a significant positive relationship between HCI and all three financial metrics, with the strongest influence observed on ROCE. The findings suggest that companies investing consistently in employee training, development, and welfare tend to achieve higher profitability and operational efficiency. This underscores the strategic value of human capital as a critical asset in enhancing corporate performance. The study contributes to the growing body of evidence supporting the integration of HCI into core business strategy. It offers practical implications for corporate managers and policymakers to design and implement policies that prioritize human capital development as a means to achieve long-term financial sustainability and competitive advantage.

Keywords

Human Capital Investment, Return on Equity, Return on Asset, Return on Capital Employed

1. Introduction

Human capital is a key driver of business growth and long-term success. Organisations invest in their workforce through hiring, training and motivating, expecting these efforts to generate future benefits and support sustainable operations. In a highly competitive global market, improving employee productivity is essential for organisations to create value and achieve a competitive edge. Many companies adopt comprehensive programs to develop their workforce, ensuring both business growth and longevity.

Organisations invest significantly in employee development programs, including training, education, health care and other benefits. In an increasingly knowledge-driven economy, the relationship between human capital Investment (HCI) and firm profitability has become a focal point. As Indian companies listed on the Bombay Stock Exchange (BSE) navigate a competitive and evolving market landscape, understanding how investments in human capital influence financial performance is crucial for strategic decision-making. Human capital, encompassing the skills, knowledge, and experience of a company's workforce, represents a significant factor in driving organizational success and enhancing profitability.

This article explores the impact of human capital investment on the profitability of BSE-listed companies in

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India. It aims to elucidate how spending on employee development, training, recruitment, and overall welfare translates into financial outcomes for firms. By examining financial performance metrics like ROA, ROE, and ROCE and correlating them with HCI practices, we provide insights into whether and how these investments contribute to or detract from a company's bottom line.

The significance of this analysis lies in its potential to offer valuable implications for corporate strategy and investment decisions. For stakeholders including investors, management, and policymakers, understanding this dynamic can inform better strategies for optimizing human capital investments to achieve superior financial performance. As we delve into the data and case studies of various BSE-listed companies, this article seeks to reveal patterns and insights that reflect the broader impact of human capital expenditure on firm profitability in the Indian context.

1.1. Literature Review

Matimba F Masuluke and Collins C Ngwakwe [5] aims at finding relation between Human Capital Investment and Firms' Net Profit. For the study 28 sample companies selected from FTSE/JSE stock exchange [5]. Study found that there is a significant relation between human capital investment and sales turnover, and human capital investment has propensity to positively impact better performance of net profit.

Job Francis Obiazonwa, Osh [7] studied to find relation between expenditure made on human capital and the financial performance of manufacturing companies with ROE, and ROA as key indicators of finance. The study collected 400 questionnaires with two sample units. Descriptive statistics and linear regression were employed for data analysis. The result indicated that human capital expenditure has significant relation with ROE and ROA. Researchers found that there is a positive impact on human expenditure and financial performance.

Ming Wang and Chich-Jen Shieh and Fu-Jin Wang [4] explores the relationship between human capital investment, organizational culture, and organizational performance, using data from 150 questionnaire respondents. Key components of human capital investment include staff recruitment, inspiration, training, and development, while organizational leadership, trust, interpersonal relationships, and values represent organizational culture and performance. Using hypothesis testing, correlation, and regression analysis, the study highlights the critical role of training and development in empowering managers to unlock employee potential and achieve organizational goals.

Steve Ukenna et al. [10] examines the relationship between human capital and organizational performance among 25 Nigerian small-scale industries (SSIs), focusing on variables such as skills, education, knowledge, and training. Using multiple regression, ANOVA, t-tests, and Pearson correlation, it found a strong link between human capital effectiveness and both financial and non-financial performance. The research emphasizes that continuous training and skill development are essential for improving firm performance and achieving a competitive edge.

Onyekwelu, Osisioma & Ugwuanyi [6] Studied the impact of human capital accounting on financial and market performance. Researchers selected five sample units. The study adopted both a survey and a descriptive approach. Data was collected from a questionnaire consisting of 21 questions, out of 72 respondents 60 were taken, for secondary data financial statements and website information were used. Collected data are analysed using percentages and Chi-squire statistical tests. study presents a comparative analysis between the current accounting practice of corporate valuation and investment on human capital as an asset. The study revealed that there is a positive impact on financial performance and a significant increase in firms' net worth by investment on human capital and also there is a positive impact on the share price of a firm through investment on human capital.

Ahesha Perera and Sujani Thrikawala [8] investigated the impact of human capital investment on the financial performance of Sri Lankan companies. The study analyzed data from 40 companies across 20 business sectors listed on the Colombo Stock Exchange over 2009-2010. Using F-tests, correlation, and regression analysis, the study confirmed a significant relationship between human capital investment and financial performance.

Gaurav Talan et al. [9] aim at defining relation among HR expenditure and performance of BSE Sensex 30 firms. For study data has been collected regarding expenditure on HR and Profit After Tax of 2007 to 2016. To test hypothesis correlation and regressions are used. An equation is built with statistical software SPSS. Result of correlation shows that expenditure of HR positively relates to firm performance. And result of regression reveals that HR expenditure have significant effect on a financial performance of selected firms.

Moin & Qureshi, [1] investigates the impact of Human Resource Accounting (HRA) on the profitability of publicly traded textile firms in Pakistan, utilizing a comprehensive analysis of data from 73 companies over a five-year period. Employing panel regression analysis, the study reveals that while staff costs positively influence return on assets and return on capital employed, the number of employees has a negative effect on these financial metrics. This suggests that investing in employee development and welfare can enhance productivity and financial performance.

Ozioma & P. (PhD), [2] examines how staff training, development costs, and staff increases affect profitability in 76 Nigerian non-financial firms (2010-2020). Regression analysis finds that training positively impacts EBITDA but not ROCE, while staff increases improve ROCE but not EBITDA. The study highlights the importance of regular training and strategic staff expansion to boost performance and recommends prioritizing skill development and workforce growth.

Parham & Heling, [3] investigates how Human Capital Efficiency (HCE) impacts financial performance, measured by ROTA, ROE, and Employee Productivity (EP), in 33 Dutch production companies over six years (2007-2012). Using the VAIC model and multiple regression analysis, the study reveals that HCE positively influences all three performance indicators, with a particularly strong relationship with EP, explaining 76.5% of its variation. The findings emphasize the importance of efficient human capital utilization in enhancing financial and operational outcomes, providing managers with valuable insights for strategic workforce planning.

1.2. Objectives of the Study

To find the relation between human capital investment and financial performance.

1.3. Methodology

The study focuses on the top 25 companies listed on the Bombay Stock Exchange (BSE), based on the highest number of employees working in the organisation for the financial year 2024. The analysis covers the ten-year period from 2014-15 to 2023-24. Data for the study were collected from the companies' annual reports, the Money control platform, and employee benefit data from the CMIE Prowess database.

The study applied a normality test, and due to the non-normality of the data, a non-parametric test was used. Additionally, correlation and regression tests were conducted to examine the relationship between HCI and key indicators of financial performance.

2. Data Analysis

Table 1. *Showing sample units with Average Human capital investment and ROA, ROE, ROCE.*

Sl No.	Company Name	HCI	ROA	ROE	ROCE
1	Tata Consultancy Services Ltd.	153305.61	27.20%	38.60%	48.28%
2	Infosys Ltd.	92543.00	18.49%	25.55%	32.97%
3	State Bank Of India	86982.18	0.50%	8.20%	6.22%
4	H C L Technologies Ltd.	60299.05	16.73%	24.20%	28.66%
5	Wipro Ltd. It	63471.78	11.91%	18.34%	22.44%
6	Coal India Ltd.	73567.30	11.25%	42.83%	23.99%
7	Larsen & Toubro Ltd.	39732.75	3.00%	12.80%	10.22%
8	Tata Motors Ltd.	58917.77	0.97%	0.76%	9.33%
9	Tech Mahindra Ltd.	34814.73	11.99%	19.68%	22.48%
10	Reliance Industries Ltd.	24413.12	4.24%	10.05%	9.56%
11	Tata Steel Ltd.	41673.41	2.45%	6.62%	10.99%
12	Ltimindtree Ltd.	14850.60	17.12%	23.63%	30.10%
13	H D F C Bank Ltd.	21324.74	1.73%	16.17%	7.38%
14	I C I C I Bank Ltd.	18960.65	1.18%	11.69%	6.65%
15	Oil & Natural Gas Corp. Ltd.	27114.56	5.39%	11.52%	12.33%
16	Bank Of Baroda	15571.30	0.32%	4.95%	5.94%
17	Hindalco Industries Ltd.	18863.40	2.73%	7.38%	8.77%
18	Axis Bank Ltd.	11508.42	0.97%	9.99%	6.87%
19	Mahindra & Mahindra Ltd.	17078.42	7.84%	12.65%	15.72%
20	Indian Oil Corp. Ltd.	19684.73	4.79%	13.84%	15.32%
21	Bajaj FinServ Ltd.	6719.51	1.64%	13.41%	12.33%
22	Kotak Mahindra Bank Ltd.	9718.07	1.99%	12.65%	7.08%

Sl No.	Company Name	HCI	ROA	ROE	ROCE
23	Sun Pharmaceutical Inds. Ltd.	10007.97	7.56%	11.92%	17.36%
24	N T P C Ltd.	11879.42	4.29%	11.27%	8.21%
25	Grasim Industries Ltd.	8532.89	2.56%	7.58%	8.65%

The Table 1 highlights the financial performance of select companies across various sectors over a 10-year period, focusing on Human Capital Investment (HCI), Return on Assets (ROA), Return on Equity (ROE), and Return on Capital Employed (ROCE). IT and technology companies like TCS and Infosys exhibit significantly higher HCI, emphasizing their reliance on skilled personnel, alongside strong profitability metrics (ROA, ROE, and ROCE). In contrast, traditional sectors like banking, manufacturing, and energy demonstrate lower HCI and varying financial performance, with banks generally showing modest ROA and ROE but consistent capital efficiency. The data reflects the correlation between human capital investment and profitability in knowledge-driven industries, while capital-intensive sectors like oil, steel, and banks focus more on asset utilization and operational efficiency.

2.1. Normality Test of Data

Table 2. *Showing Result of Normality Test.*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
ROA	.217	25	.004	.821	25	.001
ROE	.229	25	.002	.858	25	.003
ROCE	.218	25	.003	.818	25	.000

a. Lilliefors Significance Correction

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of ROA is the same across categories of Company Name.	Independent-Samples Kruskal-Wallis Test	.462	Retain the null hypothesis.
2	The distribution of ROE is the same across categories of Company Name.	Independent-Samples Kruskal-Wallis Test	.462	Retain the null hypothesis.
3	The distribution of ROCE is the same across categories of Company Name.	Independent-Samples Kruskal-Wallis Test	.462	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure 1. *SPSS Output of the Result of Kruskal-Wallis Test.*

The Tests of Normality using the Kolmogorov-Smirnov (K-S) and Shapiro-Wilk (S-W) tests assess normal distribution for ROA, ROE, and ROCE. The pp-values for all tests are less than 0.05, indicating statistically significant deviations from normality. For all three metrics the results of both the Kolmogorov-Smirnov and Shapiro-Wilk tests indicate that the data do not follow a normal distribution.

2.2. Nonparametric Test

This table provides a summary of hypothesis tests conducted using the Kruskal-Wallis Test, which is a non-parametric method to compare distributions across different groups. The Kruskal-Wallis Test is used for all three variables (ROA, ROE, ROCE). This test compares the medians of the groups to determine if they are statistically different. The p-value for all three tests is 0.462. Since the significance value (p-value) is greater than the significance level (0.05), the decision is to retain the null hypothesis for all

three variables.

There is no statistically significant difference in the distributions of ROA, ROE, and ROCE across the categories of "Company Name." This suggests that the financial performance metrics (ROA, ROE, ROCE) are consistent across the different companies analyzed.

2.3. Correlation Test with Spearman Rank Correlation

Table 3. *Showing Result of Correlation Test among Variables.*

Correlations						
			HCI	**ROA**	**ROE**	**ROCE**
Spearman's rho	HCI	Correlation Coefficient	1.000	.362	.345	.418*
		Sig. (2-tailed)	.	.076	.092	.037
		N	25	25	25	25
	ROA	Correlation Coefficient	.362	1.000	.759**	.918**
		Sig. (2-tailed)	.076	.	.000	.000
		N	25	25	25	25
	ROE	Correlation Coefficient	.345	.759**	1.000	.748**
		Sig. (2-tailed)	.092	.000	.	.000
		N	25	25	25	25
	ROCE	Correlation Coefficient	.418*	.918**	.748**	1.000
		Sig. (2-tailed)	.037	.000	.000	.
		N	25	25	25	25

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Output from SPSS 22

Interpretation of Correlation

The table presents the results of Spearman's rank correlation analysis between Human Capital Investment (HCI), Return on Assets (ROA), Return on Equity (ROE), and Return on Capital Employed (ROCE). There is no significant relationship between HCI and ROA and between HCI and ROE as the correlation coefficient value is more than 0.05. but There is a significant moderate positive relationship between HCI and ROCE Since $p < 0.05$, the correlation is statistically significant at the 5% level.

There is a strong and significant relationship between ROA and ROE.ROA and ROCE.ROE and ROCE. These results suggest that while HCI has a notable influence on ROCE, its relationship with ROA and ROE is not statistically significant. Additionally, the financial metrics (ROA, ROE, ROCE) are strongly interrelated.

2.4. Regression Analysis

2.4.1. Regression of HCI and ROA

The regression analysis demonstrates a significant positive relationship between Human Capital Investment (HCI) and Return on Assets (ROA), with a strong correlation ($R = 0.661$). The model explains 43.7% of the variability in ROA ($R^2 = 0.437$), and the adjusted R^2 (0.412) confirms the robustness of the explanatory power. The ANOVA results show the model is statistically significant ($F = 17.849$, $p = 0.000$), indicating that HCI significantly impacts ROA. The coefficients reveal that when HCI is zero, the estimated ROA is 8.743%, and for every unit increase in HCI, ROA increases slightly but significantly ($p = 0.001$). With no multicollinearity issues (Tolerance = 1.000, VIF = 1.000), the analysis underscores the critical role of HCI as a predictor of ROA, highlighting the value of human capital investment in improving financial performance.

Table 4. Showing Result of Regression Test of HCI and ROA.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Avg HCI[b]	.	Enter

a. Dependent Variable: Avg ROA

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.661[a]	.437	.412	5.364%

a. Predictors: (Constant), Avg HCI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	513.596	1	513.596	17.849	.000[b]
	Residual	661.829	23	28.775		
	Total	1175.425	24			

a. Dependent Variable: Avg ROA

b. Predictors: (Constant), Avg HCI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.743	2.364		3.699	.001		
	Avg HCI	.000	.000	.602	3.612	.001	1.000	1.000

a. Dependent Variable: Avg ROE

2.4.2. Regression of HCI and ROE

Table 5. Showing Result of Regression Test of HCI and ROE.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Avg HCI[b]	.	Enter

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
a. Dependent Variable: Avg ROE			
b. All requested variables entered.			

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.602[a]	.362	.334	7.963%
a. Predictors: (Constant), Avg HCI				

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	827.300	1	827.300	13.047	.001[b]
	Residual	1458.416	23	63.409		
	Total	2285.716	24			
a. Dependent Variable: Avg ROE						
b. Predictors: (Constant), Avg HCI						

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.743	2.364		3.699	.001		
	Avg HCI	.000	.000	.602	3.612	.001	1.000	1.000
a. Dependent Variable: Avg ROE								

The regression analysis reveals a significant positive relationship between Human Capital Investment (HCI) and both Return on Assets (ROA) and Return on Equity (ROE). For ROA, the model shows a strong correlation ($R = 0.661$) and explains 43.7% of its variability ($R^2 = 0.437$), with HCI being a statistically significant predictor ($p = 0.001$). Similarly, for ROE, the correlation is moderate ($R = 0.602$), with 36.2% of its variability explained by HCI ($R^2 = 0.362$), and the relationship is also statistically significant ($p = 0.001$). In both cases, the coefficients indicate that an increase in HCI leads to a small but positive impact on financial performance, while the constant suggests baseline ROA and ROE values when HCI is zero. Overall, the findings highlight the critical role of HCI in improving both ROA and ROE, reinforcing the importance of human capital investment for financial performance.

2.4.3. Regression of HCI and ROCE

The regression analysis indicates a significant positive relationship between Human Capital Investment (HCI) and Return on Capital Employed (ROCE), along with ROA and ROE. For ROCE, the model shows a strong correlation ($R = 0.696$) and explains 48.5% of the variability in ROCE ($R^2 = 0.485$), with HCI being a statistically significant predictor ($p <$

0.001). Similarly, for ROA and ROE, the models show correlations of 0.661 and 0.602, explaining 43.7% and 36.2% of their variability, respectively, with both relationships also statistically significant (p = 0.001). The coefficients across all models indicate a positive impact of HCI on financial performance, with slight variations in baseline values represented by the constants. These findings underscore the importance of investing in human capital to enhance key financial metrics, such as ROA, ROE, and ROCE, demonstrating its pivotal role in driving organizational success.

Table 6. Showing Result of Regression Test of HCI and ROCE.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Avg HCIb	.	Enter

a. Dependent Variable: Avg ROCE

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.696[a]	.485	.462	7.767%

a. Predictors: (Constant), Avg HCI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1304.979	1	1304.979	21.633	.000[b]
	Residual	1387.462	23	60.324		
	Total	2692.441	24			

a. Dependent Variable: Avg ROCE

b. Predictors: (Constant), Avg HCI

Coeffi cients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.590	2.306		3.292	.003		
	Avg HCI	.000	.000	.696	4.651	.000	1.000	1.000

a. Dependent Variable: Avg ROCE

3. Conclusion

This study reaffirms the vital role human capital investment (HCI) plays in shaping the financial performance of India's top 25 BSE-listed companies. By analyzing data from 2014-15 to 2023-24, it is evident that firms that invest significantly in their employees—through training, development, recruitment, and welfare—tend to experience better financial outcomes. The strongest correlation was found between HCI and ROCE, followed by ROA and ROE, indicating that human capital contributes meaningfully to operational efficiency and profitability.

Despite the variations across sectors, particularly between knowledge-driven industries and capital-intensive ones, the regression analysis consistently shows a statistically significant and positive relationship between HCI and financial performance indicators. This underlines a clear message: people are not just resources; they are strategic assets.

Companies should view HCI not as a cost but as a long-term investment. Management should focus on structured learning programs, continuous professional development, and well-being initiatives that improve both employee capabilities and organizational outcomes. Policymakers and investors should also consider HCI data as a key metric when evaluating firm health. In a future shaped by innovation and agility, it is the empowered, educated, and engaged workforce that will ultimately define a company's success. Investing in people is no longer optional—it is essential.

Abbreviations

HCI	Human Capital Investment
BSE	Bombay Stock Exchange
ROA	Return on Assets
ROI	Return on Investment
ROCE	Return on Capital Employed

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Moin, H. ul, & Qureshi, N. A. (2023). The Impact of Human Resource Accounting on Profitability: A Study of Listed Textile Firms on PSX. *International Journal of Management Research and Emerging Sciences*, *13*(4), Article 4. https://doi.org/10.56536/d21pgz45

[2] Ozioma, G. A., & P. (PhD), U. F. N. (2021). The Effect Of Human Resource Accounting (Hra) On Profitability: A Study Of Selected Firms Quoted On The Nigerian Stock Exchange. *EPRA International Journal of Economics, Business and Management Studies (EBMS)*, *8*(11), Article 11. https://doi.org/10.36713/epra8891

[3] Parham, S., & Heling, G. (2015). The Relationship between Human Capital Efficiency and Financial Performance of Dutch Production Companies. *Research Journal of Finance and Accounting*, *6*.

[4] Kai Ming Au, A., Altman, Y., & Roussel, J. (2008). Employee training needs and perceived value of training in the Pearl River Delta of China: A human capital development approach. *Journal of European Industrial Training*, *32*(1), 19-31. https://doi.org/10.1108/03090590810846548

[5] Masuluke, M. F., & Ngwakwe, C. C. (2018). *Relationship Between Human Capital Investments And Firm's Net Profit*. *08*(01).

[6] Onyekwelu, U., Fidelia, P., Scholar, & Osisioma, B. (2015). *Impact Of Human Capital Accounting On Corporate Financial Performance-A Study Of Selected Banks In Nigeria*. https://doi.org/10.37745/ejaafr.2013

[7] Osho, A., & Obiazonwa, J. (2018). *Human Capital Expenditure and Financial Performance of Quoted Manufacturing Companies in Port Harcourt*.

[8] Perera, A., & Thrikawala, S. (2012). Impact of Human Capital Investment on Firm Financial Performances: An Empirical Study of Companies in Sri Lanka. *International Proceedings of Economics Development & Research*, *54*, 11-16.

[9] Talan, G., Sharma, G. D., & Sehrawat, K. (2017). The Relationship between HR Expenditure and Firm's Performance: Case of S&P BSE SENSEX 30 Companies. *Global Journal of Enterprise Information System*, *9*(3), 59-64.

[10] Ukenna, S., Ijeoma, N., Anionwu, C., & Olise, M. (2010). Effect of investment in human capital development on organisational performance: Empirical examination of the perception of small business owners in Nigeria. *European Journal of Economics, Finance and Administrative Sciences*, 93-107.