



## Analyzing human resource metrics and performance in manufacturing companies of India: A study on HPCL

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### Abstract

This article is specifically crafted to delve into the intricate correlation between human resources, particularly management employees, and pre-tax profits within a corporate setting. The chosen subject of analysis is Hindustan Petroleum Corporation Limited (HPCL). As part of the methodological approach, the research is conducted using a descriptive design to comprehensively explore the dynamics at play. The study's timeframe encompasses data spanning from the financial years 2014-15 to 2018-19, providing a robust foundation for analysis. Employing the statistical tool of correlation analysis, the research uncovers compelling insights. Among the significant findings is the identification of a robust positive relationship between management personnel and pre-tax profits, highlighting the pivotal role that effective leadership and strategic decision-making contribute to financial performance. Conversely, a notable negative relationship emerges between non-management employees and pre-tax profits, shedding light on the differing impacts various employee categories can have on overall financial outcomes in an organization. These findings underscore the importance of human resource management strategies and their direct influence on financial performance metrics, offering valuable insights for organizations aiming to optimize their operational efficiency and profitability.

**Keywords:** Management employees, Non-management employees, profit before tax, human resource, accounting practices, HPCL, HRM

### Introduction

The exploration of Human Resource Accounting (HRA) traces back its roots to the 1960s. Since its inception in India, numerous studies have delved into the realm of HRA, solidifying its status as a contemporary focal point in the field of accounting, both within the Indian landscape and across global platforms. Prominent voices in the accounting sphere continually advocate for the inclusion of human resources as tangible assets within financial frameworks, underscoring their pivotal role within organizational structures. Despite this collective emphasis, the formal recognition of human resources as crucial assets by professional and legal entities remains elusive. Human resources undeniably form the lifeblood of any organization, serving as the driving force behind operational processes and strategic initiatives. Albeit their undeniable significance, human resources are often overlooked as mere operational expenses rather than being acknowledged as valuable organizational assets. Various methodologies have been introduced to assess the worth and contribution of human resources, yet none have garnered the necessary approval from regulatory bodies for widespread implementation. However, a select few trailblazing companies, such as HPCL, have taken the proactive step of integrating HRA practices into their financial reporting frameworks, setting a commendable example for the industry at large. Against this backdrop, this article endeavors to delve into the specifics of HPCL's HRA strategies, shedding light on their pioneering approach within the sphere of human resource valuation and recognition.

### Review of Literature

Dr. Anand Das Gupta *et. al.* in 2019 conducted a comprehensive research study titled "A Study on Human

Resource Accounting (HRA) A New Paradigm in the Field of Accounting by Considering Human Resource as an Asset of an organization". The primary focus of this study was to shed light on how HRA exemplifies a revolutionary shift in accounting practices. The core objectives outlined in the study emphasized the exploration of the multifaceted facets of HRA. An underlying issue highlighted was the evident gap between theoretical conceptualizations of HRA and its practical implementation, particularly within Indian companies that have eluded the incorporation of HRA in their financial records. In addressing this discrepancy, the study aimed to substantiate the purported benefits through the hypothesis: "Significant impact of human resource accounting on overall performance in organizations." The research endeavors to elucidate the critical implications and potential advantages of integrating HRA into organizational accounting frameworks, with a particular focus on enhancing organizational performance metrics. This article was meticulously crafted and thoroughly informed by a blend of primary and secondary data sources, fostering a comprehensive approach to its subject matter. The researchers employed a sophisticated 5-point Likert scale within their meticulously designed questionnaire, utilizing this effective tool to gather insights from a diverse pool of 100 respondents. The dataset collected through the questionnaire revealed a compelling trend in respondents' perspectives, as the prevailing sentiment overwhelmingly favored the alternate hypothesis. This hypothesis posits a significant correlation between the adoption of Human Resource Accounting (HRA) practices within an organization and the resultant impact on its overall performance. By scrutinizing the responses gathered through the survey, the researchers were able to glean valuable insights relevant to the organizational landscape,

suggesting a robust connection between HRA implementation and enhanced organizational performance. The synthesis of primary and secondary data served as a solid foundation for the article, bolstering its analytical rigor and validity. Mohammad Ali and colleagues in their 2020 research sought to delve into the realm of human resource accounting disclosure within financial institutions listed on the Dhaka Stock Exchange (DSE). Their primary objective was to scrutinize the HRAD practices prevalent in these institutions by analyzing the impact of both financial and non-financial determinants. The study involved an in-depth examination of 90 annual reports spanning from 2014 to 2018 and included data from 18 financial institutions. Through their analysis, the researchers formulated six hypotheses focusing on key factors such as service length, company size, profitability, total number of employees, and the number of pages within the reports. To evaluate these hypotheses, a combination of dichotomous scoring, descriptive statistics, correlation analysis, and multiple linear regression techniques were employed. The findings shed light on the significant influence company size and the total number of pages have on HRAD practices, while the total number of employees emerged as a non-significant factor. The core essence of the study revolved around gaining insights into the HRAD practices of DSE-listed financial institutions, highlighting a trend where larger companies tended to demonstrate more interest in HRAD compared to their smaller counterparts, who exhibited less enthusiasm towards such disclosures. Mr. Bharat Kumar Kantilal Pala and colleagues (2021) [2] conducted a case study titled "Importance and Challenges of Human Resource Accounting in India," which elaborated on the concept of Human Resource Accounting (HRA). The article primarily concentrated on the theoretical foundations of HRA, covering its introduction, definitions, objectives, significance, methodologies, limitations, and future prospects. The study aimed to analyze human assets and provide cost value information. Various methods of HRA were discussed, including the cost approach, historical cost method, and replacement cost method. Additionally, value-based approaches such as the present value of future earnings, organizational value, and model HRA methods were examined. The article also addressed the limitations associated with HRA and provided insights into its future landscape, culminating in a comprehensive conclusion. Ayodeji M Adejuwon and colleagues (2020) [3] performed a case study titled "Corporate determinants and human resource accounting disclosure of listed banks in Nigeria," focusing on the financial institutions within Nigeria. The primary aim of this research was to explore the connection between corporate determinants and Human Resource Accounting Disclosure (HRAD). The corporate determinants examined included bank profitability, firm size, and listing age. Three hypotheses were formulated: H1 - a significant relationship exists between profitability and HRAD; H2 - a significant relationship exists between firm size and HRAD; and H3 - a significant relationship exists between listing age and HRAD. The financial statements of 16 banks listed on the Nigeria Stock Exchange from 2014 to 2018 were analyzed. A disclosure index was applied to these banks, utilizing a checklist comprising 22 items. The items related to Human Resource Accounting Information (HRAI) were evaluated using a dichotomous scoring method. To measure the data, an econometric model was

employed. The analysis included correlation, variance inflation factor, and panel least squares regression to test the hypotheses. The findings indicated a significant relationship between profitability and Human Resource Accounting Disclosure (HRAD), as well as between firm size and HRAD. However, no significant relationship was found between listing age and HRAD.

Manikant Dubey and colleagues (2019) [4] performed a case study titled "The Human Resource Accounting: An Unseen Aspect of Employee Turnover Ratio," which explored industrial perspectives on Human Resource Accounting (HRA). The article begins by emphasizing the importance of human resources within an organization. It includes a notable quote: "Take away all the factories, trade, avenues of transportation, and in four years, I will have re-established myself." The discussion then transitions to defining HRA, supported by another quote from Renis Likert: "All activities of any enterprise are stated and determined by persons who structure that organization; plants, officers, computers, and all other automated equipment that modern firms use are unproductive except for human effort and direction." The article outlines the need, purpose, and various approaches to HRA, including attainment, overhead, preparation overhead, prosperity overhead, and additional overhead. It also details assessment methods and categorizes human capital into Intellectual Capital, Social Capital, and Emotional Capital. An example from Hindustan Unilever Limited (HUL) is provided, leading to the article's conclusion. Wiyadi *et al.* (2021) [5] performed a case study titled "Practices of Human Resource Accounting Disclosure: A Comparative Study across ASEAN Countries," which aimed to examine HRAD practices among companies in various ASEAN nations. The countries included in the study were Indonesia, Malaysia, Vietnam, the Philippines, Thailand, and Singapore. The analysis utilized 16 parameters derived from previous research, focusing on 195 companies from the years 2014 and 2015. A descriptive method was employed for the analysis, and the HRAD criteria were evaluated using a dichotomous scoring procedure. Data was gathered from various websites related to the countries in question, relying solely on secondary data. The 16 indicators were established by A1 Mamum (2009). The results indicated that Indonesia had the highest HRAD practice score at 71%, followed by Thailand at 66%, Vietnam at 65%, Malaysia at 59%, Singapore at 43%, and the Philippines at 40%. However, it was noted that no country met all the indicators, highlighting the need for the adoption of HRAD practices.

### Scope and limitations of the study

This study focused on a single company. It analyzed data that spans a period of ten years. The findings and conclusions drawn from this study are limited to this particular organization only. The choice to concentrate on just one company allows for a detailed examination of its internal factors and trends. The ten-year timeframe provides a stable basis for observing changes and patterns over time. This limitation means that results may not apply to other companies or industries. The insights gained are rich, but their generalizability is restricted due to this narrow scope.

### Objectives of the Study

1. To examine the correlation between Management personnel and Profit before tax.

- To investigate the connection between Non-Management personnel and Profit before tax.

**Hypotheses**

- H01:** There is no significant positive correlation between management personnel and profit before tax.
- H02:** There is no significant negative correlation between non-management personnel and profit before tax.

**Research Methodology**

In conducting the study, the author utilized a descriptive research design, where they employed the statistical tool known as the Pearson correlation method to examine the hypotheses. This method was executed using the SPSS software, a widely utilized tool in statistical analysis. Notably, the author relied solely on secondary data for their research endeavor, with the primary source being the annual reports of HPCL obtained from the NSE website. The data spanned a time frame of five years, specifically from 2014-15 to 2018-19, enabling a comprehensive analysis of trends and patterns over this period. It is important to highlight that the author deliberately omitted data from the subsequent years, ranging from 2019-20 to 2021-22, primarily due to the disruptive impact of the Covid-19 crisis during this period. This strategic decision aimed to maintain data consistency and integrity, underscoring the author's commitment to producing reliable and accurate research findings. By meticulously selecting and analyzing data within a specific timeframe, the study sought to offer insights into the HPCL's performance and dynamics within a defined scope, thereby contributing valuable knowledge to the existing body of literature in this domain.

**Data analysis and interpretation**

The tabular representation outlined below provides a detailed insight into the correlation between Management Employees (MEMP) and Profit before tax (PBT) within the company. Understanding this data is crucial for management to make informed decisions regarding resource allocation and overall strategy. By analyzing these figures, the organization can determine the effectiveness of its management team in generating profit and optimizing operational efficiency. Moreover, these statistics offer a valuable perspective on the financial health and sustainability of the business. Executives can use this information to identify trends, patterns, and potential areas for improvement within the company's operations. As such, this table serves as a fundamental tool in evaluating and enhancing the company's overall performance and success.

**Table 1:** Correlations

		MEMP	PBT
MEMP	Pearson Correlation	1	.950*
	Sig. (2-tailed)		.013
	N	5	5
PBT	Pearson Correlation	.950*	1
	Sig. (2-tailed)	.013	
	N	5	5

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

Upon analyzing the data provided in the table, it is evident that a pronounced positive correlation of a coefficient value of 0.950 exists between the category of Management

employees and the financial metric of Profit before tax (PBT) at the established significance level of 5%. This correlation suggests a strong relationship between these two variables, indicating that as the number of Management employees increases, the Profit before tax also tends to rise. The statistical analysis conducted led to the rejection of the null hypothesis H01, solidifying the conclusion that there is indeed a noteworthy association between Management employees and Profit before tax within the context of the examined dataset. This finding underscores the importance of the role played by Management employees in influencing the profitability of the company, suggesting potential areas for further investigation and strategic decision-making to optimize organizational performance and financial outcomes.

The table labeled "Table-2" contains detailed information and statistics specifically concerning Non-management employees (referred to as NMEMP) and their impact on the company's financial performance, particularly in relation to the Profit before tax (abbreviated as PBT). By analyzing the data provided in this table, stakeholders and decision-makers within the organization can gain valuable insights into how the non-management segment contributes to the overall profitability and financial health of the company. This data may shed light on trends, patterns, and correlations between the number of non-management employees and the pre-tax profits generated by the company. Understanding these relationships is crucial for strategic planning, resource allocation, and optimizing the performance of the workforce. Additionally, the table could be instrumental in identifying areas of improvement or potential efficiency gains within the non-management employee structure that could positively impact the bottom line. Therefore, the insights derived from Table-2 play a vital role in guiding management decisions, optimizing resource allocation, and ultimately maximizing profitability.

**Table 2:** Correlations

		NMEMP	PBT
NMEMP	Pearson Correlation	1	-.944*
	Sig. (2-tailed)		.016
	N	5	5
PBT	Pearson Correlation	-.944*	1
	Sig. (2-tailed)	.016	
	N	5	5

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

The table-2 data analysis highlights a noteworthy finding suggesting a substantial negative correlation of -0.944 between Non-management employees and Profit before tax. This significant result signifies that as the number of Non-management employees increases, there is a negative impact on Profit before tax. As a result, based on this strong statistical evidence, the null hypothesis H02, which hypothesized no relationship between Non-management employees and Profit before tax, must be accepted. This inference implies that the presence and involvement of Non-management employees in the operational structure of the company directly influence its financial performance, specifically impacting the pre-tax profitability. Consequently, this outcome carries important implications for organizational management strategies and resource allocation decisions, underscoring the importance of optimizing the composition and distribution of staffing

levels within the non-management cadre to mitigate adverse effects on the company's financial health and overall performance metrics.

### Discussion and Implications

Analysis conducted on the financial data revealed a consistent pattern indicating a strong positive correlation between the number of management employees and the Profit Before Tax (PBT) on an annual basis. This relationship elucidates that as the count of management employees within the organization rises, there is a corresponding increase in the PBT figures, signifying their impact on the financial performance.

Conversely, a contrasting trend was observed in relation to non-management employees and the PBT. The data underscored a conspicuous negative correlation between the presence of non-management staff and the profit margins. Specifically, as the quantity of non-management employees within the company grows, the PBT experiences a downturn, suggesting a potential influence of their roles and responsibilities on the financial outcomes observed.

These findings lay a foundation for understanding how different employee categories play distinct roles in shaping the financial performance of the company. The research outcomes emphasize the significance of effective management practices in driving profitability, while also drawing attention to the potential challenges posed by the expansion of non-management employee roles. As organizational strategies evolve, these insights serve as valuable inputs for decision-making processes aimed at optimizing performance metrics and achieving sustainable growth.

Further exploration into the underlying factors contributing to these relationships can provide a more comprehensive understanding of the interplay between human resource allocation and financial outcomes. By delving deeper into the nuances of employee dynamics within the corporate framework, organizations can tailor their strategies to leverage the strengths of each employee category and mitigate potential drawbacks. This holistic approach to talent management and financial analysis can pave the way for enhanced operational efficiencies and strategic positioning in the competitive business landscape.

### Conclusion

It has been well-established that human resources are indeed indispensable assets within any organization. This understanding is crucial for legal authorities such as the ICAI and ASB to acknowledge and prioritize. They should work towards establishing a concrete set of standards that can effectively translate the concept of Human Resource Accounting (HRA) into real-world applications. In order to ensure widespread adoption and compliance, it becomes imperative for all companies operating in India to adhere to these standardized practices in relation to HRA. By institutionalizing these guidelines, companies can optimize their human capital management strategies and drive sustainable growth and success in today's dynamic business landscape. The proactive integration of HRA principles into regulatory frameworks will undoubtedly contribute towards fostering a culture of transparency, accountability, and organizational effectiveness across the corporate sector in India.

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