HUMAN VALUE INCLUSION IN FINANCIAL STATEMENTS: BOOST OR WASTE

Nagendrakumar Nagalingam [*], Naduni Madhavika [**], Yogendran Umashangar [**]

* *Corresponding author*, SLIIT Business School, Sri Lankan Institute of Information Technology, Malabe, Sri Lanka
Contact details: SLIIT Business School, Sri Lankan Institute of Information Technology, Malabe Campus, New Kandy Rd, 10115 Malabe, Sri Lanka
** SLIIT Business School, Sri Lankan Institute of Information Technology, Malabe, Sri Lanka

How to cite this paper: Nagalingam, N., Madhavika, N., & Umashangar, Y. (2022). Human value inclusion in financial statements: Boost or waste. *Corporate Ownership & Control, 20*(1), 87–94.
https://doi.org/10.22495/cocv20i1art8

ISSN Online: 1810-3057
ISSN Print: 1727-9232

Received: 17.08.2022
Accepted: 18.11.2022

JEL Classification: J54, M4, M10, O15
DOI: 10.22495/cocv20i1art8

Abstract

Most organizations refer to their human resources (HR) as a significant value-creating asset but fail to recognize them in financial statements. Further, the financial accounting domain operates without a unique accounting standard for human value inclusion (HVI) in the financial statements. Moreover, comprehensive empirical studies in this area are hard to find. Therefore, the present case study attempts to find whether the inclusion of human capital in financial statements has an impact on financial performance and if so, which valuation model is a more appropriate, historical cost (HC) or present value (PV). The paired samples t-test method was employed to analyze 10-year data (2010–2019) and it is revealed that the inclusion of human capital in financial statements in the PV model might enrich the financial performance of a firm. These findings could inspire the administrators of professional bodies of accounting to initiate a distinct accounting standard to recognize HR in financial statements.

Keywords: Accounting Standards, Financial Statements, Human Resources, Human Value Inclusion, Human Resource Accounting

Authors' individual contribution: Conceptualization — N.N.; Methodology — N.N., N.M., and Y.U.; Investigation —Y.U.; Formal Analysis — N.N., N.M., and Y.U.; Writing — Original Draft — N.M. and Y.U.; Writing — Review & Editing — N.N.; Supervision — N.N.; Project Administration — Y.U.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

The success of an organization to a greater extent depends on the way where its resources (physical and human) are effectively and efficiently utilized. COVID-19 has enlightened the business world about the significance of human resources (HR) and its value creation to the organization since many physical resources have turned out to be non-functional during the lockdown period. However, through the contribution of HR, organizations managed to run their operations and survive their businesses even during that crucial period.

In accounting terms, the importance of HR becomes meaningless since the organizations fail to recognize their employees in the financial statements. Human resource accounting (HRA) addresses the need for capitalizing human value (HV) as an asset in financial statements which is called human value inclusion (HVI). In other words, HRA requires systematic valuation of HR and presents them in the books of accounts (Aljamaan, 2017). However, it is noted that standard setters so far have not paid adequate attention to coming out with a unique accounting standard to address the issue. As a result, the employee-related transactions are recorded as an expense in the statement of comprehensive income (SOCI) and not as capitalized value as per HRA (Akintoye et al., 2018).

It is true that the subjective nature of HR leads to difficulties in capitalizing and disclosing them in financial statements. However, many valuation methods have been suggested for reporting HVI in financial statements. Rao (2014) broadly classifies them into two approaches viz. cost and value. Both approaches cover the different aspects of HVI, where the cost approach focuses on the employee's productivity and the value approach on the economic value associated with the entity (Hossain, 2015). Though these approaches are available in valuing HR neither the business organizations nor the accounting standard-setting institutions have taken steps to recognize them in the financial statements (Nagendrakumar, 2019; Akintoye et al., 2018; Ezeagba, 2014). As a result, this paper sheds the light on the research question of whether the HVI in financial statements would enhance the financial performance of an organization.

The rest of the paper is organized as follows. Section 2 discusses the critical literature review, Section 3 explains the methodology adopted, Section 4 discusses the results, and Section 5 presents the conclusion.

2. LITERATURE REVIEW

The American Accounting Association (AAA, 1973) defined HRA as actions of identifying, measuring, and communicating HR data with interested parties. The HRA mainly focused on measuring employees from a cost perspective and the economic value associated with the organization (Hossain, 2015). The concept of HRA has been evolving since the early 1960s in many phases with several growths and challenges to date. However, the lack of attention by accounting bodies has led to the non-development of a framework that can recognize HV in financial statements (Arkan, 2016). It is a known fact that HR is considered an important value-generating asset in any organization, although capitalizing the HV in financial statements tends to be a challenging task (Sharma & Shukla, 2010). However, scholars have developed mainly two valuation approaches viz., cost approach models and value approach models (Akintoye et al., 2018). The cost approach models represent the real cost incurred by an organization on employee's development (Sharma & Shukla, 2010). The value approach models focus on identifying the employee's stream of benefits or the economic value attached to the organization (Hossain, 2015).

There are many value approach models proposed by the literature. The present study elaborates on the present value (PV) model of the discounted future earning method while summarizing other models in Appendix A.

In this approach, the PV is obtained by calculating the future earnings of different groups of employees which are estimated up to their retirement age and those values will be discounted at a predetermined rate (Arkan, 2016). This model enables the calculation of the realizable economic value provided by employees over the years and accordingly, the organization can determine the lasting period of employees. Most scholars suggest that this model can be used when quantifiable and analyzable data are available. In addition, it recognizes the current value of employees which is scientific and realistic (Bhovi, 2016; Ibukun-Falayi & Falayi, 2014). Hence, the PV method is a popular and widely suggested method to quantify HV in financial statements. However, scholars are of the view that ignoring the employee's productivity and the probability of employees leaving the organization is some drawbacks of this method (Arkan, 2016). Kumar et al. (2016) and Oluwatoyin (2014) proposed steps involved in determining PV calculations. Initially, employees need to be categorized into certain similar groups according to their position, skills, and age. Thereafter, the organization needs to determine the annual earnings of each group, and based on this, total earnings up to employee retirement need to be calculated. Finally, the cost of the capital rate will be used to discount the calculated total earnings.

There are many cost approach models proposed by the literature. The present study elaborates on the historical cost (HC) model while summarizing other cost approach models in Appendix B.

HC is the expenditure incurred by the organization pertaining to the HR-related process such as recruitment, selection, and induction to acquire HR (Nagendrakumar, 2019). This method focused on cash outlay invested to acquire and develop human assets by capitalizing the cost incurred. Then the capitalized amount is amortized over the service length of employees. As a result, the unamortized portion reveals the value of HR (Sharma, 2019; Ezeagba, 2014; Aljamaan, 2017). As such scholars noted this as one of the popular methods as it follows the normal accounting procedure which is like the fixed asset valuation method. Sharma (2019) and Hossain (2015) supported this statement as the HC is in line with the basic accounting principles of matching cost and revenue and the model suggested as appropriate to be applied in HRA due to coverage of basic accounting procedures. However, another set of scholars argued for difficulties in estimating the length of the service of the employees and the cost incurred on employees having different values (Hossain, 2015; Ibukun-Falayi & Falayi, 2014).

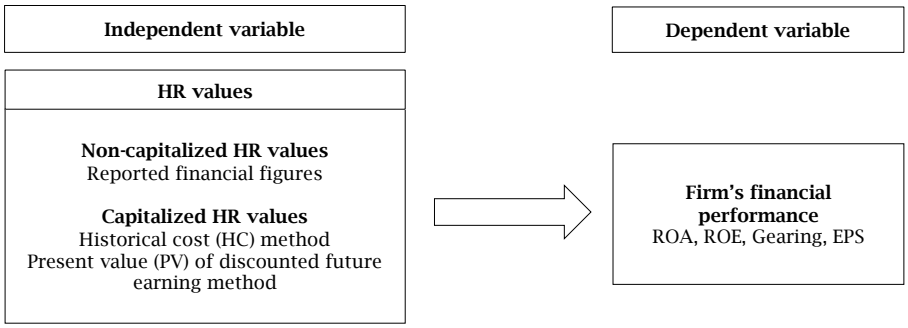
Although many quantification methods are available, the business world has not applied the reporting aspect of HV in financial statements due to failure in recognizing the HV in the accounting standards. The reason given for this issue is the inherent complexity in HR measurements. However, the rapid growth in complex International Financial Reporting Standards (IFRS) is observed in the recent past. The IFRS are being developed to adopt more complex measurement methods in other areas of accounting. As a result, scholars point out that within the scope of IFRSs, the HVI in financial statements is possible (Nagendrakumar, 2019; Ibukun-Falayi & Falayi, 2014).

3. RESEARCH METHODOLOGY

Based on the thorough literature review the most common reporting methods (HC and PV) were found suitable to carry out a comprehensive analysis. A public listed company from the automobile industry in Sri Lanka was selected as the case

(hereinafter referred to as case) and data such as employee groups, annual earnings, development cost incurred, and their effective useful period of employment were collected for 10 years from 2010–2019 (2020 and 2021 were purposely omitted since the researchers believed that the data would not adequately support the study since of the impact of COVID-19 and the economic crisis). The data were analyzed through paired t-tests to explain the impact of the adoption of the HC and PV methods on HVI having the 10-year financial performance of the case. For this purpose, the financial data were converted to reflect the HR values (HR capitalized values) based on PV and HC. The conversion procedures are discussed under Section 4 to make it more meaningful. Accordingly, Figure 1 illustrates the conceptualization framework which is set to show the impact of the financial data before and after capitalizing the HV impact on the firm's financial performance.

Figure 1. Conceptual framework



4. RESULTS AND DISCUSSION

This section deals with the HC and PV models with empirical data analysis. The data analysis first introduces Table 1, which depicts the variables as it appears in the annual report 2010–2019. Table 2 shows the HC conversion values of human capital while Table 3 shows the PV conversion values of the human capital of the same variables that are illustrated in Table 1. Accordingly, this section has two main subsections, viz., HC impact on the financial performance and PV impact on the financial performance of the HVI of the case under review.

Table 1. Financial summary before conversion

Items of financial statements	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Net income	89,830	648,893	1,183,132	354,823	164,556	329,974	209,538	238,207	504,117	107,461
Total assets	1,357,497	2,946,720	6,311,234	5,925,368	4,932,435	5,767,062	5,382,518	5,693,727	7,127,805	6,009,109
Total Equity	539,489	1,096,618	2,166,992	2,298,072	2,424,328	2,731,793	2,802,040	2,948,242	3,338,660	3,313,629
Total debt	313,504	907,301	3,238,635	3,249,257	2,131,483	2,214,994	1,948,189	940,192	2,320,488	1,523,125
Outstanding shares (No)	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621
ROA	6.62%	22.02%	18.75%	5.99%	3.34%	5.72%	3.89%	4.18%	7.07%	1.79%
ROE	16.65%	59.17%	54.60%	15.44%	6.79%	12.08%	7.48%	8.08%	15.10%	3.24%
Gearing	36.75%	45.28%	59.91%	58.57%	46.79%	44.78%	41.01%	24.18%	41.00%	31.49%
EPS	24.81	179.21	326.76	97.99	45.45	91.13	57.87	65.79	139.23	29.68

Note: Figures in Rs. '000.

4.1. Historical cost impact on financial performance

The following steps were taken when incorporating the HV based on the HC model.

1) Identified the relevant year's training and development cost.

2) Capitalized relevant cost as an asset and added back to the SOCI.

Debit (DR)	***Credit (CR)***
Human resource capital (HRC)	Statement of comprehensive income (SOCI)

3) The relevant year's cost has been amortized over a useful period which is the management expectation to obtain benefits from provided training and development for employees.

Debit (DR)	***Credit (CR)***
Statement of comprehensive income (SOCI)	Human resource capital (HRC)

4) The unamortized amount indicates the HV for a particular financial year.

5) Changes in the SOCI have been adjusted through retained earnings.

Table 2 shows, the above treatment resulted in the following capitalization of HV based on the HC model.

Table 2. Financial summary after incorporating human value

Items of financial statements	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Net income	90,183	649,207	1,183,175	355,166	164,631	329,851	209,907	238,193	506,368	107,035
Total assets	1,357,851	2,947,388	6,311,945	5,926,422	4,933,564	5,768,067	5,383,892	5,695,087	7,131,416	6,012,294
Total equity	539,842	1,097,286	2,167,704	2,299,126	2,425,457	2,732,799	2,803,414	2,949,602	3,342,271	3,316,814
Total debt	313,504	907,301	3,238,635	3,249,257	2,131,483	2,214,994	1,948,189	940,192	2,320,488	1,523,125
Outstanding shares (No)	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621
ROA	6.64%	22.03%	18.75%	5.99%	3.34%	5.72%	3.90%	4.18%	7.10%	1.78%
ROE	16.71%	59.16%	54.58%	15.45%	6.79%	12.07%	7.49%	8.08%	15.15%	3.23%
Gearing	36.74%	45.26%	59.90%	58.56%	46.77%	44.77%	41.00%	24.17%	40.98%	31.47%
EPS	24.91	179.3	326.77	98.09	45.47	91.1	57.97	65.78	139.85	29.56

Note: Figures in Rs. '000.

The presented financial summary illustrates that, over the years, the value of the company has been understated by Rs. 14 million without recognizing and incorporating HV where the average of total assets has been increased by Rs. 1,445,259 due to the capitalization of employee development costs. On other hand, the company's net income is also understated by Rs. 3.18 million due to the existing treatment method of employee development cost in the financial statements. As a result of incorporating HV and amortization, the company's average net income has marginally increased from Rs. 383,053,034 to Rs. 383,371,516. The changes in net income are also reflected in the retained earnings of the company. As a result, the company's total equity has increased by an average of Rs. 1,445,259. Also, due to the stipulated accounting practices, the understatement of asset balances over the years shows the company's inability to disclose sufficient information to shareholders on HV investments. However, this value has been reflected through earnings per share (EPS), but it can be stated that the management of the case under study has not embraced the significance of HV and that the same has resulted in strengthening the EPS.

Table 3 depicts the set of ratios that have been computed to reflect the impact on the case's financial performance before and after capitalizing HV. The result pertaining to ratios shows that almost all indicators were not significantly affected by incorporating HR values using the HC method. Mean values of return on assets (ROA) and return on equity (ROE) as a percentage before capitalizing HV are at 7.93% and 19.86% respectively, slightly increased to 7.94% and 19.87% accordingly, after HV is recognized. Similarly, the mean value of EPS slightly increased from Rs. 105.79 to Rs. 105.88 consequently the cost incurred on training, has been re-added to profit. On other hand, the mean value of the gearing ratio has slightly declined from 42.97% to 42.96%, respectively, due to the increase in total equity by adjusting HV through retained earnings which is a good sign of business performance.

Table 3. Summary of descriptive analysis

Statistical measures	*ROA*		*ROE*		*Gearing*		*EPS*	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
N	10	10	10	10	10	10	10	10
Mean	0.0793	0.0794	0.1986	0.1987	0.4297	0.4296	105.79	105.88
SD	0.0679	0.0679	0.2001	0.2000	0.1098	0.1098	91.59	91.62
Variance	0.005	0.005	0.040	0.040	0.012	0.012	8388.75	8394.27

Hypothesis testing of the HC model:

The following hypothesis *(H1)* has been tested at a 5% significance level in paired samples t-test for the HC method to derive the statistical significance between the two selected groups.

H1: There is a significant impact on the firm's financial performance using the HC model.

Table 4 illustrates that except for the gearing ratio, the obtained p-value is higher than the alpha value of 0.05 for all other ratios ($p \geq \alpha$). A marginal change was observed in the ROA, ROE, and EPS ratios because the case under investigation did not incur relatively a larger amount of training and development cost over the observed period. Also, most of the year's amortization cost significantly impacted the net income which tends to fluctuate the balances. As a result, ROA ($p = 0.140 \geq 0.05$), ROE ($p = 0.366 \geq 0.05$), and EPS ($p = 0.198 \geq 0.05$) show statistical insignificance which leads to rejection of *H1*. On other hand, the gearing ratio showed statistical significance ($p = 0.000 \leq 0.05$) due to the unchanged debt portion and increased equity balances reflected through retained earnings over the observed period which leads to accepting the alternative hypothesis for this ratio (*H1*). Overall, after evaluating each pair of ratios individually, the null hypothesis (H_0) was accepted because of the difficulty to obtain significant changes in the financial ratios by considering the case's investment in employee development.

Table 4. Summary of paired samples t-test

Paired items	*Significance (2-tailed)*
Pair 1: ROA pre–ROA post	0.140
Pair 2: ROE pre–ROE post	0.366
Pair 3: Gearing pre–Gearing post	0.000
Pair 4: EPS pre–EPS post	0.198

4.2. Present value impact on financial performance

The selected case's financial summary before capitalization was already presented in Table 1. The following steps were taken when incorporating the HV based on the PV model.

1) Employee classifications on position and relevant age categories and related monthly earnings have been obtained from the management.

2) Total employees have been classified according to their position.

3) Based on employees' monthly earnings, the average annual earnings have been calculated for all 10 years separately for each group. It was assumed that the average earnings that the employee group will receive up to their retirement age.

4) From the age classification, the average age for the employee group has been computed.

5) The retirement age and cost of capital/discounting rate details have been extracted from the published annual report of the company.

- The retirement age throughout these 10 years is 58.
- Cost of capital is 9.5% (2010), 9.5% (2011), 10.5% (2012), 10.5% (2013), 10% (2014), 9.5% (2015), 10% (2016), 11.5% (2017), 10% (2018), and 11.6% (2019).

6) Total earnings up to retirement age have been calculated and discounted at the predetermined rate to obtain the PV of the organization. This calculation comprised two components such as PV at the beginning of the year and PV at the end of the year separately, for each year for all classified groups.

The following steps explain how the calculated PV was incorporated into the financial statements

1) Capitalized the computed beginning year HR balance.

Debit (DR)	*Credit (CR)*
Human resource capital (HRC)	Human resource reserve (HRR)

2) Salary pertaining to the respective year has been added backed to the SOCI; the calculated amortization based on the difference between the beginning year and end of the year balances have been debited to HRR and the balance amount charged to other comprehensive income as HR adjustments.

Debit (DR)	*Credit (CR)*
Human resource reserve (HRR)	Statement of comprehensive income (SOCI)
Other comprehensive income	

3) Amount debited in the HRR charged as amortization and deducted from the HRC account.

Debit (DR)	*Credit (CR)*
Human resource reserve (HRR)	Human resource capital (HRC)

Table 5. Financial summary after incorporating present value

Items of financial statements	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*
Net income	113,119	705,669	1,289,399	455,254	253,518	438,787	391,127	433,932	745,116	351,139
Total assets	1,643,156	3,325,960	6,702,692	6,328,288	5,533,818	6,432,072	5,996,760	6,336,620	7,857,034	6,652,948
Total equity	825,148	1,475,858	2,558,451	2,700,992	3,025,712	3,396,804	3,416,282	3,591,135	4,067,889	3,957,468
Total debt	313,504	907,301	3,238,635	3,249,257	2,131,483	2,214,994	1,948,189	940,192	2,320,488	1,523,125
Outstanding shares (No)	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621	3,621
ROA	6.88%	21.22%	19.24%	7.19%	4.58%	6.82%	6.52%	6.85%	9.48%	5.28%
ROE	13.71%	47.81%	50.40%	16.86%	8.38%	12.92%	11.45%	12.08%	18.32%	8.87%
Gearing	27.53%	38.07%	55.87%	54.61%	41.33%	39.47%	36.32%	20.75%	36.32%	27.79%
EPS	31.24	194.89	356.1	125.73	70.02	121.18	108.02	119.84	205.79	96.98

Note: Figures in Rs. '000.

Table 5 presents the financial summary incorporating HV through the PV model, which has a greater impact on stated financial figures. Over the years, Rs. 5.35 billion worth of HV has been understated due to non-capitalization in financial statements which indicates how capitalizing the HV further enriches the case's value. It can be highlighted that over the years the case's net income was also understated by Rs. 1.34 billion as current accounting standards only allow treating the employee-related cost as expenses in the SOCI. On the contrary, the HRA perspective suggests eliminating the cost component and capitalizing the value generated by the employees to the organization. As a result of incorporating HV and amortization, the company's average net income has increased from Rs. 383,053,034 to Rs. 517,706,084. Further, due to the creation of an additional reserve account (HRR) after the adjustments of HV, the case's total equity has increased by an average of Rs. 535,587,533. In addition to that understatement of Rs. 1.34 billion reflects that shareholders are unable to identify the true position of their investment calculated through EPS.

The ratio results as shown in Table 6, indicate that almost all indicators were significantly and positively affected by incorporating HV using the PV model. The mean value of ROA and ROE in terms of a percentage before capitalization of HV at 7.93% and 19.86%, respectively were significantly increased after capitalization of HV to 9.41% and 20.08% correspondingly. Due to the reversal of employee's salary in SOCI, the mean value of EPS has drastically increased from Rs. 105.79 to Rs. 142.98. Similarly, the change in the company's gearing ratio can be interpreted as a favorable indication by the decrease in its mean value from 42.98% to 37.81%, due to the addition of HRR to the total equity.

Table 6. Summary of descriptive analysis

Statistical measures	*ROA*		*ROE*		*Gearing*		*EPS*	
	Pre	*Post*	*Pre*	*Post*	*Pre*	*Post*	*Pre*	*Post*
N	10	10	10	10	10	10	10	10
Mean	0.0793	0.0941	0.1986	0.2008	0.4297	0.3781	105.79	142.98
SD	0.0679	0.0586	0.2001	0.1561	0.1097	0.1118	91.59	90.9926
Variance	0.005	0.003	0.040	0.024	0.012	0.013	8388.75	8279.66

Hypothesis testing of the PV model

The following hypothesis *(H2)* has been tested at a 5% significance level in paired samples t-test for the PV method to derive the statistical significance between two selected groups.

H2: There is a significant impact on the firm's financial performance using the PV model.

Table 7 shows that paired samples t-test indicated that except for ROE, the obtained p-value is lower than the alpha value of 0.05 for all other ratios ($p \leq \alpha$). In line with the HRA principles, the reversal of salary expenditure in the SOCI and capitalization of a large sum of amount as an asset in the statement of financial position (SOFP) has significantly influenced the ROA, gearing, and EPS ratios. Consequently, ROA ($p = 0.006 \leq 0.05$), gearing ($p = 0.000 \leq 0.05$), and EPS ($p = 0.000 \leq 0.05$) depict the statistical significance that leads to accepting the alternative hypothesis (*H2*). In contrast, the income tax rate being almost static in the period from 2010 to 2012, higher income tax charges are reported during this period compared to other years that impacted the ROE by having little or negative percentage changes. Further, the concept of HR capitalization does not give any implications to tax authorities and therefore, signals the unusual variance in profit after-tax. As a result, this ratio does not imply any statistical differences; therefore the null hypothesis (H_0) has been accepted.

Table 7. Summary of paired samples t-test

Paired items	*Significance (2-tailed)*
Pair 1: ROA pre–ROA post	0.006
Pair 2: ROE pre–ROE post	0.896
Pair 3: Gearing pre–Gearing post	0.000
Pair 4: EPS pre–EPS post	0.000

Overall, after evaluating each pair of ratios individually, the alternate hypothesis (*H1*) was accepted because the adoption of the PV model favorably impacted the case's financial performance through the stated ratios.

As discussed, the reworked financial summary by adopting the HC model shows little differences in most of the key figures such as net income, total assets, and total equity because over the 10 years the case under study has incurred comparatively lower investment in developing their human resources. This has been reflected in the computed financial ratios which show except gearing ratios little or no changes over the years. On other hand, the reworked financial summary by adopting the PV model shows a greater impact in almost every indicator where it considers the value generation from employees up to their retirement age. Compared to the HC model a huge portion in form of HR capital has been included as an asset in SOFP through the PV model. The related salary expenses for the years have been added back to the SOCI which resulted in an incremental effect on the net income of the case in line with the HRA practices. Except for ROE in relation to tax impact as discussed in previous sections, all the financial indicators showed a favorable impact after capitalizing HR values through the PV model compared to the HC model.

The reason behind the popularity of these two-valuation approaches is that the HC focuses on the productivity of HR, and it considers the real capital cost incurred on employee training and developments, and hence, the monetary value of them can be allocated to the ledgers. On the other hand, the PV approach focuses on the current cost of employees since the calculation involves discounting the future stream of benefits with a discounting rate which is evidence of the economic value of employees to the organization. This argument is validated by the scholars Akintoye et al. (2018), Shreelatha and Sinha (2018), Kumar et al. (2016), Ibukun-Falayi & Falayi, (2014), Joshi and Mahei (2012).

5. CONCLUSION

The study concludes that the HVI in the financial statements enriches the financial performance of the organizations. The case study has sufficiently explained that the HC approach slightly enriches the financial performance, but it is not significant. Instead, the PV approach shows an excellent enhancement in financial performance which is significant. As a result, the study concludes that the PV approach is the best for the capitalization of HR. Accordingly, the long-standing gap of empirical evidence on HVI in financial statements and the way that it would impact financial performance has been answered. Thus, the study's overall conclusion is that the HVI based on the PV approach boosts financial performance and it is not a futile element.

Therefore, the study recommends that business organizations consider HVI in the financial statements and based on the PV approach. In addition, the study recommends the accounting standard setters to dedicate their effort to developing a unique accounting standard for HVI in the financial statements.

This study is limited to a case and hence, future researchers are encouraged to consider numerous cases in conducting a similar type of research. Another limitation is that the training and development cost of the case during the observed period is less which might be the reason for rejecting the alternate hypothesis of the HC model. Thus, future researchers are encouraged to concentrate on such cases having a reasonable amount of training and development cost recorded.

REFERENCES

1. Akintoye, I. R. (2012). The relevance of human resource accounting to effective financial reporting. *International Journal of Business Management and Economic Research, 3*(4), 566–572. http://www.ijbmer.com/docs/volumes/vol3issue4/ijbmer20120304011.pdf
2. Akintoye, I. R., Siyanbola, T., Adekunle, I., & Benjamin, R. (2018). Human resource accounting: A panacea to financial reporting problem. *Research Journal of Finance and Accounting, 9*(14), 25–41. https://publication.babcock.edu.ng/asset/docs/publications/ACCT/9683/3688.pdf

3. Aljamaan, B. (2017). Human resource accounting: Concepts, objectives, models and criticism. *Global Journal of Human Resource Management, 5*(7), 1–10. https://www.eajournals.org/wp-content/uploads/Human-Resources-Accounting-Concepts-Objectives-Models-and-Criticism.pdf
4. American Accounting Association (AAA). (1973). Report of the Committee in Human Resource Accounting. *The Accounting Review, 48*, 169–185. https://www.jstor.org/stable/3203238
5. Arkan, T. (2016). Human resource accounting: A suggested model for measurement and valuation. *Finance, Rynki Finansowe, Ubezpieczenia, 1*(79), 173–193. https://doi.org/10.18276/frfu.2016.79-13
6. Bhovi, B. (2016). A study on human resources accounting models and practices in the organizations. *GE-International Journal of Management Research, 4*(9), 22–37. https://1library.net/document/yd26o71q-study-human-resources-accounting-models-practices-organizations.html
7. Ezeagba, E. C. (2014). The need for inclusion of human resources accounting in the balance sheet. *An International Multidisciplinary Journal, 8*(2), 377–392. https://doi.org/10.4314/afrrev.v8i2.23
8. Hossain, M. S. (2015). Valuation and disclosure of human resource accounting (HRA). *International Scholar Journal of Accounting and Finance, 1*(1), 51–62. https://www.academia.edu/34231399/Valuation_and_Disclosure_of_Human_Resource_Accounting_HRA_
9. Ibukun-Falayi, O. R., & Falayi, I. (2014). Improving human resource accounting through International Financial Reporting Standards. *Research Journal of Finance and Accounting, 5*(22), 83–89. https://www.iiste.org/Journals/index.php/RJFA/article/viewFile/17597/17883
10. Islam, A. M., Kamruzzaman, M., & Redwanuzzaman, M. (2013). Human resource accounting: Recognition and disclosure of accounting methods & techniques. *Global Journal of Management and Business Research Accounting and Auditing, 13*(3), 1–10. https://globaljournals.org/GJMBR_Volume13/1-Human-Resource-Accounting.pdf
11. Islam, M. S., & Sarker, J. (2016). Human resource accounting: Practical challenges in recognition, measurement, accounting treatment procedure and a possible way out. *IOSR Journal of Business and Management, 18*(9), 41–46. https://doi.org/10.9790/487X-1809024146
12. Joshi, U., & Mahei, R., (2012). Human resource accounting system in selected Indian companies. *Journal of Social and Development Sciences, 3*(2), 69–76. https://core.ac.uk/download/pdf/288023427.pdf
13. Kashive, N. (2013). Importance of human resource accounting practices and implications of measuring value of human capital: Case study of successful PSUs in India. *XIMB Journal of Case Research, 4*(2), 113–144. https://cutt.ly/5N4eajx
14. Kumar, M. T., Kavida, V., & Jegajothi, R. (2016). Valuation of human capital in Infosys technologies Ltd. *International Journal of Commerce and Management Research, 2*(8), 55–59. http://www.managejournal.com/archives/2016/vol2/issue8/2-7-32
15. Meshack, S. I., Jeff, O. D., & Ifurueze, P. C. (2014). Impact of aggregated cost of human resource on profitability: An empirical study. *Journal of Business & Management, 3*(2), 30–43. https://doi.org/10.12735/jbm.v3i2p30
16. Nagendrakumar, N. (2019). Human value inclusion in financial statements: Concerns for standard setters. *International Journal of Auditing and Accounting Studies, 1*(1), 102–111. https://cutt.ly/SN4rRzd
17. Oluwatoyin, A. S. (2014). Human resource accounting and disclosure in financial statement: Literature review. *Research Journal of Finance and Accounting, 5*(22), 64–75. https://www.iiste.org/Journals/index.php/RJFA/article/viewFile/17595/17881
18. Pandurangarao, D., Basha, C. S., & Rajasekhar, D. (2013). A study on human resource accounting methods and practices in India. *International Journal of Social Science & Interdisciplinary Research, 2*(4), 95–102. http://indianresearchjournals.com/pdf/IJSSIR/2013/April/11.pdf
19. Rahaman, M. M., Hossain, A. M., & Akter, T. (2013). Problem with human resource accounting and a possible solution. *Research Journal of Finance and Accounting, 4*(18), 1–10. https://www.iiste.org/Journals/index.php/RJFA/article/view/9471/10265
20. Rao, A. L. (2014). Human resource accounting: A frame work for better financial accounting and reporting. *IOSR Journal of Business and Management, 16*(4), 86–90. https://doi.org/10.9790/487X-16428690
21. Sharma, S. (2019). Human resource accounting: An overview. *Inspira-Journal of Commerce, Economics & Computer Science, 5*(3), 297–300. https://www.inspirajournals.com/uploads/Issues/1938970796.pdf
22. Sharma, S., & Shukla, R. K. (2010). Application of human resource accounting in heavy industries. *Samriddhi: A Journal of Physical Sciences, Engineering and Technology, 1*(2), 131–133. https://doi.org/10.18090/samriddhi.v1i2.1589
23. Shreelatha, H. R., & Sinha, R. (2018). Measuring personnel through human resource accounting reports — A case study of Hindustan Petroleum Corporation Ltd. *International Journal of Recent Scientific Research, 9*(3–1), 25241–25244. https://cutt.ly/vN4uL4d

APPENDIX A. OTHER VALUE APPROACH MODELS

Name of the method	*Explanation*	*Citations*
Stocholtz reward valuation model	It is an improvement of the present value method where the probability of employee movement before death/ retirement is considered in this model. However, it seems to be a complex method because difficult to estimate the probabilities of likely service states of each employee and it fails to recognize the group value.	Sharma (2019), Akintoye et al. (2018), Aljamaan (2017), Arkan (2016), Hossain (2015), Oluwatoyin (2014), Ibukun-Falayi and Falayi (2014), Kashive (2013), Pandurangarao et al. (2013), Akintoye (2012)
Model for HRA prescribed by Ravindra Tiwari	Calculates value by dividing employees into two main groups as the employees who make strategic decisions and employees who implement strategic decisions. This model combines the real capital cost, present value, and performance evaluation. However, scholars argued this model involves a lengthy procedure.	Islam and Sarker (2016), Rahaman et al. (2013)
Hermanson's unpurchased goodwill model	Net income after tax to total assets except the human asset ratio needs to be calculated to compare with other peer industry companies. Hence, scholars argued this model underestimates HR values in calculations.	Bhovi (2016), Meshack et al. (2014), Akintoye (2012)
Hermanson's adjusted discounted future wages model	Employee's value is computed based on compensation or the reward received by an employee. The present value of future earnings is denoted as compensation employees receive currently. The efficiency ratio is used to adjust future earnings.	Sharma (2019), Akintoye et al. (2018), Bhovi (2016)
Morse's net benefit model	It calculates the present value of benefits provided by the employees over their service period that equals the value of HR of the organization.	Akintoye et al. (2018), Arkan (2016), Oluwatoyin (2014), Akintoye (2012)
Pekin Ogan's certainty equivalent net benefit model	This is an extension of Morse's net benefit model. The primary focus of this model is to determine the certainty factor at which the benefit will be available in the future to derive the HR value.	Arkan (2016), Akintoye (2012)
S. K. Chakraborty's aggregate payment model	It is the combination of the historical cost method and present value method and reflects HR values in financial statements.	Pandurangarao et al. (2013)
Flamholtz's model for assessing individual value to formal organizations	This is the improvement of the present value method where an individual's value is calculated based on two aspects. First, the expected conditional value during the stay of employees. Secondly, the expected realizable value includes the conditional value and probability of an employee's stay in the organization.	Ibukun-Falayi and Falayi (2014)

Source: Authors' illustration based on extensive literature review.

APPENDIX B. OTHER COST APPROACH MODELS

Name of the method	*Explanation*	*Citations*
Replacement cost model	The employee value is calculated based on the cost incurred for an organization to replace an employee if they leave the organization. This model involves the cost of acquiring a new employee, the cost of development, and the employee movement cost as well. The difficulty in obtaining the value of people from the organization's point of view is the major drawback of this model.	Nagendrakumar (2019), Sharma (2019), Akintoye et al. (2018), Aljamaan (2017), Arkan (2016), Bhovi (2016), Kumar et al. (2016), Hossain (2015), Ezeagba (2014), Meshack et al. (2014), Oluwatoyin (2014), Ibukun-Falayi and Falayi (2014), Pandurangarao et al. (2013)
Opportunity cost model	This model consists of an economic value concept when determining the HR value. Employees' value is calculated based on the next best alternative that the employer is willing to pay. The organization can use competitive bidding to estimate the opportunity cost value. The high range of judgment involved in valuing employees can be seen as a major drawback in this model.	Sharma (2019), Akintoye et al. (2018), Arkan (2016), Kumar et al. (2016), Hossain (2015), Ezeagba (2014), Meshack et al. (2014), Oluwatoyin (2014), Pandurangarao et al. (2013)
Standard cost and competitive bidding model	A firm yearly determines standard costs of recruiting, training, and development, hiring according to the employee groups. The value that arises from the highest bid for an employee depending on their contribution to the firm should get capitalized suggested in the competitive bidding model. However, the common standard cost for every employee in the assigned groups and partiality in the bidder's judgment are some pitfalls of these models.	Akintoye et al. (2018), Aljamaan (2017), Ezeagba (2014), Meshack et al. (2014), Oluwatoyin (2014), Akintoye (2012)
Contract labor method	This method captures the agreement between employee and employer consisting of agreed compensation over a specific period. The expired value needs to be written off at the time the contract reaches expiration.	Ezeagba (2014)
Capitalization of employee's salary method	This model suggested capitalizing the salaries and wages rather than treating them as expenses to make predetermined depreciation. However, scholars argued that there is a low correlation between employee's salary and their value.	Ezeagba (2014)
Exit cost	According to this model, exit cost can be divided into three main sections as the efficiency of employees before their separation from the organization, the cost of the job vacancy, and payment at the termination.	Hossain (2015)