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# Intellectual Capital Valuation of DSE-Listed Non-financial Companies in Bangladesh

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## ABSTRACT

**Intellectual capital (IC) is an organization's vital resource that helps the firm survive by confirming competitive edges. However, the valuation of IC resources is a challenging task. IC valuation is essential to employ the knowledge resource efficiently. Hence, the study aims to evaluate the IC resources of non-financial companies in Bangladesh. The research also explores the year-wise trend study and industry-based IC performance study. Data have been collected from secondary sources from 69 DSE-listed non-financial companies in Bangladesh from 2017 to 2021, comprising 345 company-year observations. The Modified Value-Added Intellectual Coefficient (MVAIC) methodology has been adopted to reflect IC value. Different statistical tests and graph and chart analyses have been performed to fulfill the study objectives. Results have shown that human capital is the primary driver of IC resources, and it dominates Intellectual Capital Efficiency (ICE) and then the overall IC efficiency (MVAIC) score. Human and structural resources utilized by Bangladeshi companies are better than those of relational and tangible capital. Research has also observed a declining trend of IC resources of the sampled companies. Telecommunication, Fuel and power, and Textile industries have better used IC resources. However, the tannery industry still needs to do so. The research contributes to resources-based theory by confirming the value of invisible resources, which supports business executives, policy-makers, managers, and potential and existing investors to make the right decisions. Further research may be conducted using an extended sample size, comparing financial and non-financial sectors, comparing among industries, or engaging other valuation techniques.**

**Keywords:** Intellectual capital, valuation, non-financial companies, manufacturing companies, service companies, Bangladesh.

## INTRODUCTION

Intellectual capital is a dynamic resource of an organization- either a business or a social entity. It grows with the proper use of knowledge resources. Generally, IC is the mixture of organization employees' skills, expertise, training capacities, decision-making power, and

ability to use structural and relational resources, such as brand value, management philosophy, organizational culture, process, database, technical edges, intellectual properties, and relationship with customers, suppliers and other third parties related to the firm. Measuring IC is necessary to determine the actual value of assets and improve the organization's hidden assets quality. However, the accounting standard-setting body must still prescribe specific rules about measuring, reporting, and disclosing intellectual resources. Consequently, organizations cannot measure and use this crucial resource properly [1]. The IC, the harder it is to identify, the harder it is to measure. Though it contributes more to the organization, there are no specific rules on correctly measuring them [2–4]. The main drawback of detecting IC is that this valuable asset does not fulfill the criteria for recognition and, as a result, is not shown in the balance sheet despite its existence [5–8].

The conventional financial statement model cannot reflect novel corporate value-creation methods [3,9–11]. Accounting scholars and researchers have tried to establish various models to estimate it but have yet to reach out. In most cases, IC measurement problems arise due to having intangible assets in finance and accounting as phenomena. There are three significant problems in gauging it in accounting: the resource identification problems, the measurement problems, and the transferability of resources problems. The International Accounting Standard Board prohibits measuring it unless it meets these conditions [12–14]. However, the Resource Based Theory (RBT) confirms that firms should use tangible and intangible assets to the highest level for better performance. In conformity with the RBT, we need to see how efficiently Bangladeshi companies utilize their tangible and intangible assets to boost their performance, value, and sustainable growth.

Thus, the main aim of this study is to assess the value of IC by adopting the MVAIC methodology of non-financial companies in Bangladesh. To fulfill this aim, the several specific objectives of this research are to the overall valuation of IC, an analysis of year-wise IC value with its trend analysis, and an analysis of industry-based IC performance of non-financial companies in Bangladesh. This research differs from other studies due to several reasons. First, we used the MVAIC methodology instead of the VAIC methodology, where we consider relational capital to evaluate IC value. Second, we estimated the industry-based IC performance to evaluate industrial insights of IC value, whereas previous studies conducted industry separately. Third, we performed the year-wise trend analysis of IC value to comprehend the better utilization of IC resources. The remaining part of this paper includes section two, which presents the conceptualization of intellectual capital and its components; section three includes IC valuation methods; section four describes study methodology; section five for results and discussion; and lastly, a conclusion.

## CONCEPTUALIZATION OF INTELLECTUAL CAPITAL AND ITS COMPONENTS

Intellectual capital consists of wisdom, experience, skill, intellectual properties, internal and external structure, and any other invisible assets that can bring future benefits to a firm. IC is the most influential resource that combines a firm's three major components, i.e., human, structural, and relational capital. These elements are the employees' backgrounds, expertise, skills, and abilities to perform the chosen tasks, corporate culture, processes, systems, databases, technological advantages, intellectual properties, and relational strengths with diverse third parties. Gogan & Draghici [15] combine IC into three significant elements, i.e.,

humans, customers, and structural capital. Human capital is the assortment of attributes relating to employees of a firm that can create value for the firm. It includes skills, expertise, Knowledge, competencies, mindsets, decision-making capabilities, etc., of a firm's employees that can help solve problems promptly [16]. Intangible resources held by a firm but not an individual is called Structural Capital. Structural is defined as "*what is left behind when the staff goes home*" [17]. Structural Capital contains management philosophy, manufacturing processes, corporate culture, research and development, hardware and software, information systems and technology, etc. [18]. Relational capital (RC) refers to the value of all external relations a business develops with its stakeholders, including customers, suppliers, opponents, government, banks, etc. RC is also interpreted as the customer capital (CC). RC acts as a catalyst for the IC. It is critical to turn IC into market value and improve a firm's business performance [19].

## IC VALUATION METHODS

Different IC measurement approaches have been developed in the last three decades to keep intellectual capital working smoothly. Customarily, various techniques have been used for internal practice by different firms. Thus, there has yet to be a universally accepted method for IC measurement. So, selecting a proper measurement method among the established ones impacts a firm's financial position and performance. The present study concentrates on measuring the monetary valuation approach. The most crucial and widely acceptable methods of monetary IC valuation are discussed below.

Stewart Stern [20] developed the Calculated Intangible Value (CIV) method in 1997 for the financial valuation of intellectual capital. This method is very similar to Baruch Lev's KCE method. While developing the model, Stewart used different definitions of intangible assets. In this process, he used the phrase "intellectual capital" to explain the concept of "packaged useful knowledge" [20]. The CIV method is structured based on certain assumptions. According to this assumption, the premium value of the company is assumed to be the result of intangible assets. A seven-step process adopted by Stewart Stern for determining the value of intellectual capital is discussed below [20]. The CIV method has several advantages; firstly, it is measured with actual company data. Second, as this method uses an average rate of 3-year average profits, it is not affected by single-year or any particular year data. Third, the data required to determine IC in the CIV method is easily obtainable from the company's financial statements. Fourthly, IC measured in this method yields good inter-company and inter-industry comparison results [21]. Fifthly, the IC value measured in the CIV method helps in investment decisions [21]. Above all, this method can provide the required information to the concerned parties by facilitating external reporting [21].

Though the CIV method has several benefits, it suffers from numerous drawbacks. First, the method generally emphasizes three-year average pre-tax earnings. Earnings of other companies in the industry help determine the surplus earnings of a firm. As a result, it is only possible to evaluate a firm's assets with this method. Second, not all intangible assets can be measured using this method [22]. Third, another problem is that no real benchmarking is available for IC evaluation [22]. Fourth, no matter how well a company utilizes its assets, especially intangible assets if its profitability is lower than that of other companies, it is not possible to determine the intellectual value of that company. Sixth, this method mainly relies


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on ROA. As a result, if a company shows more or less than the actual ROA, it is impossible to get reliable results from the method [21]. Economic Value Added (EVA) is another vital financial valuation method for measuring IC. Stern Stewart and Co., a New York City-based consulting firm, developed this method in 1994. We used the residual income approach for valuing IC under this method. Intellectual capital is the company's net income after deducting debt and equity capital costs, which is left over is the intellectual earnings. This method's advantages include a close relationship between stock price and financial planning, goal-setting, budgeting, and compensation. According to Nick Bontis, EVA serves as a benchmark for managers [23]. It establishes a common language to discuss the value-creation process, boosting a company's credibility with investors and the market. The most significant disadvantage of this model is that it fails to take the most promising management decisions, which can lead to declined shareholders' wealth [22]. Another problem is that this method ought to be revised for many business enterprises due to the cost of equity capital. Calculation of equity capitalization rate is impossible for a non-public limited company. So, this method needs to be revised to measure IC value adequately.

Rodov and Leliaert [24] created Finance Intangible Asset Measurement (FiMIAM) to connect IC value to a gap between the market and book value of the business. The model combines three leading IC constructs: Human, Customer, and Structural. The FiMIAM conceptual model supports IC component overlap. For example, human and structural capital interplay might result in organizational learning or culture or translate tacit knowledge into explicit knowledge. Although FiMIAM seeks to emphasize the strategic relevance of intellectual capital in value creation, evaluating the value of IC pieces is ambiguous. The most subjective component of the procedure is giving weights to each IC piece. They recommended determining these weights based on management experience. However, defining these weights is subjective and may not accurately reflect each IC element's impact. DIC techniques can provide a more meaningful picture of a firm's health than standard financial indicators. Because these approaches are context-specific, they can better align with corporate strategy. The main drawback of these models is that they need to allow for firm-level comparison. Other firms in the same industry may give different indications. Also, external users may be unable to access specific symptoms due to limited access [24].

Unlike market models that use publicly available data, management models need data from inside the company. By recognizing their key components, DIC methods set monetary values to intangible assets and IC. Some methods under this category determine immaterial value as an aggregate number. In another way, the value or the coefficient of specific components of IC can be ascertained separately, but the aggregate value of IC may need to be measurable [18].

## STUDY METHODOLOGY

### Population and Sampling

This research aims to reflect the worth of IC and its constituent parts for non-financial enterprises traded on Bangladesh's stock exchange. In order to accomplish its goal, the research drew on information from all of Bangladesh's listed non-financial enterprises. Dhaka Stock Exchange Ltd. [25] currently lists 241 non-financial firms. We did not include 172 businesses since we could not evaluate their IC performance without missing data. Therefore, our research includes 69 non-financial companies from 11 industries, including the ceramics sector (4), the

cement sector (6), the food and allied sector (6), the engineering sector (4), the IT sector (4), the fuel and power sector (13), the services sector (3), the real estate sector (3), the pharmaceutical and chemical industries (10) and the tannery and textile industries (11), for which data is available for the years 2017 through 2021. Therefore, 345 total observations were collected and organized into a highly balanced panel data set for this investigation.

### IC Valuation Methodology (MVAIC method)

Value Added Intellectual Coefficient (VAICTM) methodology developed by Ante Pulic in 2000 [26] and modified by Ulum et al. in 2014 [27] as Modified-VAIC is applied in this study to measure IC efficiency. Numerous studies have employed this methodology to measure the same [16,28–32]. MVAIC methodology comprises the following narrative:

**Table 1.1: MVAIC methodology**

| Variables | Descriptions | Measurement Formula |
|---|---|---|
| MVAIC | **Modified Value-Added Intellectual Coefficient** | MVAIC = ICE+CEE |
| ICE | Intellectual Capital Efficiency | ICE = HCE+SCE+RCE |
| HCE | Human Capital Efficiency | $HCE = \frac{VA}{HC}$ |
| SCE | Structural Capital Efficiency | $SCE = \frac{SC}{VA}$ |
| RCE | Relational Capital Efficiency | $RCE = \frac{RC}{VA}$ |
| CEE | Capital Employed Efficiency | $CEE = \frac{VA}{CE}$ |
| VA | Value Added | $VA = OP + E + D + A$ |

Where, OP = Operating profit, E = Employee expenses, i.e., salaries and other related costs, D = Depreciation, and A = Amortization.

### Analysis Techniques

The study adopted Microsoft Excel 2016 and IBM SPSS Statistics 23 software to analyze data collected from annual reports of sampled companies. IC was evaluated using the MVAIC methodology and comparing the IC performance between manufacturing and service companies. Trend analysis techniques were adopted to explore the propensity of utilizing IC resources. A histogram and a line chart were also deployed to reflect the trend of IC performance. A descriptive statistic like mean value is reflected to realize the summary concepts of IC value. Different graphs and charts are also used to present the industry-wise IC performance.

## RESULTS AND DISCUSSIONS

### The Overall Valuation of IC of Non-Financial Companies in Bangladesh

The study took 69 non-financial companies as a sample and five-year data from 2017 to 2021, consisting of 345 observations to achieve the objectives. The overall IC performance was estimated using the MVAIC method. The details of IC valuation output are presented in Table 1.2 and Figure 1.1.


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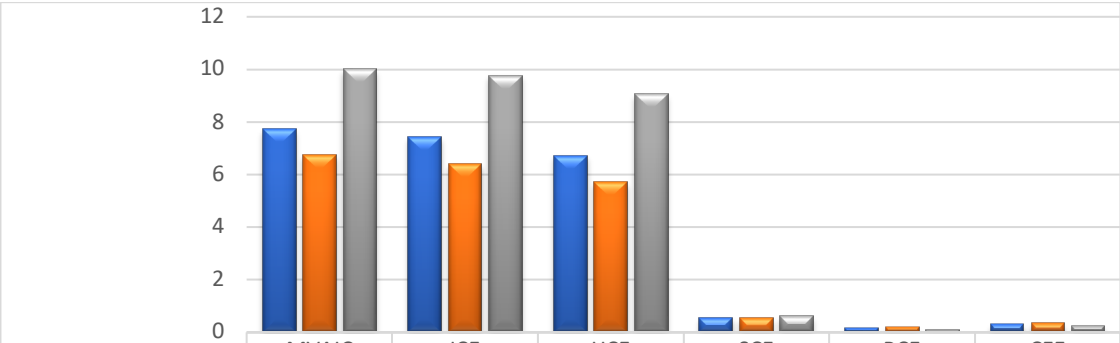
**Table 1.2: IC valuation for all samples**

| IC Value | Mean | Max | Min | SD | N |
|---|---|---|---|---|---|
| MVAIC | 7.74 | 87.88 | -0.84 | 9.65 | 345 |
| ICE | 7.43 | 87.38 | -0.85 | 9.67 | 345 |
| HCE | 6.72 | 86.39 | -1.49 | 9.56 | 345 |
| SCE | 0.56 | 6.11 | -0.87 | 0.51 | 345 |
| RCE | 0.17 | 5.67 | -1.33 | 0.35 | 345 |
| CEE | 0.31 | 2.9 | -0.05 | 0.39 | 345 |

Ulum, Ghozali, and Purwanto [27] prescribed a standard for measuring intellectual capital. He showed that firms having an MVAIC of three and a half or more are top performers and termed as outstanding institutions in quality and service. A score between 2.5 and 3.5 is considered a good performer, and between 1.5 and 2.5 is an ordinary performer. However a firm with a score of under 1.5 is termed poor-performing [27], and its intellectual capital needs to be increased. Results from Table 1.2 show that the average MVAIC of non-financial companies in Bangladesh is 7.7401, suggesting they are top performers and depict satisfactory efficiency. This value is a maximum of 87.88 and a minimum of -0.84 with a standard deviation of 9.65399 describes its explosive nature. The MVAIC values fluctuated approvingly in the sampled companies. The firms' ICE values are roughly coexisting with the MVAIC score, with a mean value of 7.4338 ranging from -0.85 to 87.38. The average human capital efficiency score is 6.7201, which is impressive. Thus, non-financial companies can add the value of BDT 6.7201 for every taka (Bangladesh Currency) from employee expenses. However, the high range (-1.49 to 86.39) with a comparatively high standard deviation specifies its volatility, like ICE and MVAIC performance. The above-stated three measurement variables exhibit simultaneous outcomes, and as such, we conclude that HCE is the primary mover of ICE and MVAIC valuation.




| | MVAIC | ICE | HCE | SCE | RCE | CEE |
|---|---|---|---|---|---|---|
| All Samples | 7.7401 | 7.4338 | 6.7201 | 0.5608 | 0.1692 | 0.3064 |
| Manufacturing | 6.752293721 | 6.413100388 | 5.701046313 | 0.540100279 | 0.19554445 | 0.3391928 |
| Service | 9.997962667 | 9.76668019 | 9.049361905 | 0.60820419 | 0.10911301 | 0.231282067 |

**Figure 1.1: Comparative presentation of intellectual capital value**

From the same table, we observed that the average efficiency of non-financial companies in the case of SC is 0.5608, i.e., more than half of the value added by a non-financial company is mainly consumed by structural capital. However, the SCE value ranges from -0.87 to 6.11, indicating that the companies paid more than six times the value added for internal administrative purposes. RCE value showed only 0.1692, indicating that the companies spend one-sixth of

their total value added on relational activities, which needs to be raised to upsurge the performance of the non-financial companies. Nevertheless, such companies' RCE values are nearly six times their value added. In contrast, their RCE value exhibits an unexpected negative value against the expectation that relational activities create more value for the firm. The mean capital employed efficiency of Bangladeshi non-financial companies is 0.3064, which ranges from -0.05 to 2.9. The standard deviation score is 0.39298, which illustrates its volatile nature.

**Analysis of Year-wise Intellectual Capital Value**

Our study used five years of data from 2017 to 2021. The results we obtained by analyzing the year-wise data of ICs valued through the MVAIC method are described in Table 1.3. It is also presented through the graphical presentation in Figures 1.2 to 1.7. Along with graphical analysis, trend lines provide essential insights into the dynamic nature of the assessed factors. In this context, we can see from Figure 1.2 that the overall IC (MVAIC) trend is observed in the case of non-financial companies in Bangladesh. In 2020, its level suddenly decreased (6.605). Naturally, the impact of Covid-19 is behind the massive underperformance in 2020. Later, the 2021 overall IC (MVAIC) performance showed an upward trend again. The overall IC is quite similar to the ICE idea from Figure 1.3. From the chart, we observed the ICE performance was 7.79 in 2017, but in 2018 it increased to over eight. Then it decreased significantly in 2019 and further reduced in 2020. But, based on the performance of 2021, the trend has become upward again.

**Table 1.3: Year-wise intellectual capital value presentation (Average of 69 companies)**

| Year | MVAIC | ICE | HCE | SCE | RCE | CEE |
|---|---|---|---|---|---|---|
| 2017 | 8.104 | 7.790 | 7.075 | 0.550 | 0.165 | 0.314 |
| 2018 | 8.315 | 8.009 | 7.277 | 0.582 | 0.150 | 0.306 |
| 2019 | 7.680 | 7.364 | 6.642 | 0.566 | 0.156 | 0.316 |
| 2020 | 6.605 | 6.329 | 5.609 | 0.582 | 0.220 | 0.276 |
| 2021 | 7.997 | 7.678 | 6.998 | 0.525 | 0.155 | 0.320 |

We can observe the trend of human capital efficiency in the last five years in Figure 1.4. Based on the chart, our results agree with the last two types of IC measurements (MVAIC and ICE). In 2020, a downward trend was noticed in the overall IC performance and human resource efficiency. Again, it showed an upward trend in 2021. Generally speaking, in Bangladesh, non-financial companies have a downward trend in human resource efficiency, requiring proper policy formulation, direction, and implementation.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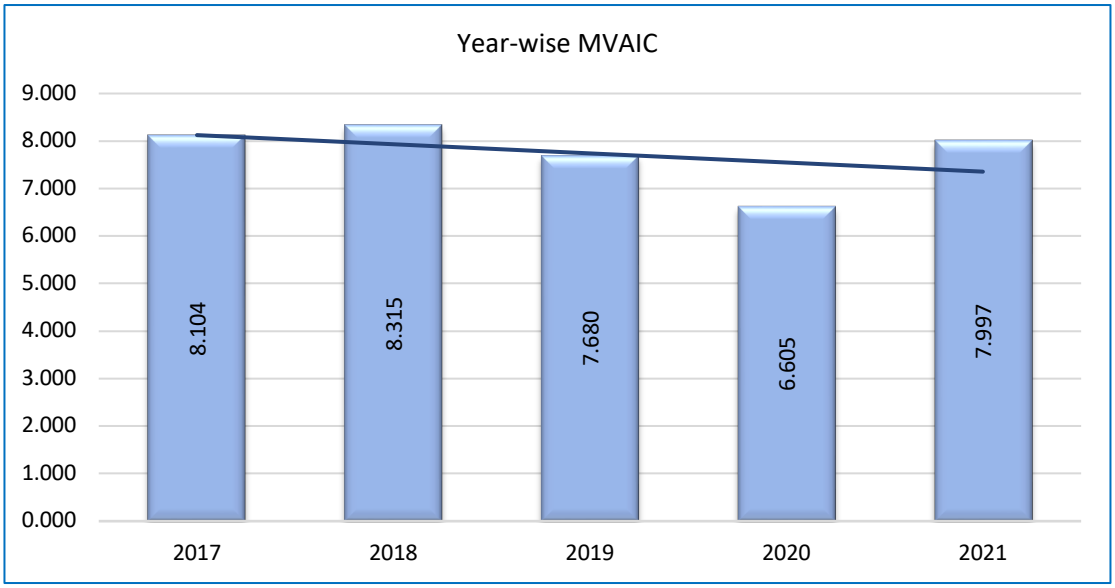


**Figure 1.2: MVAIC value with trend analysis**

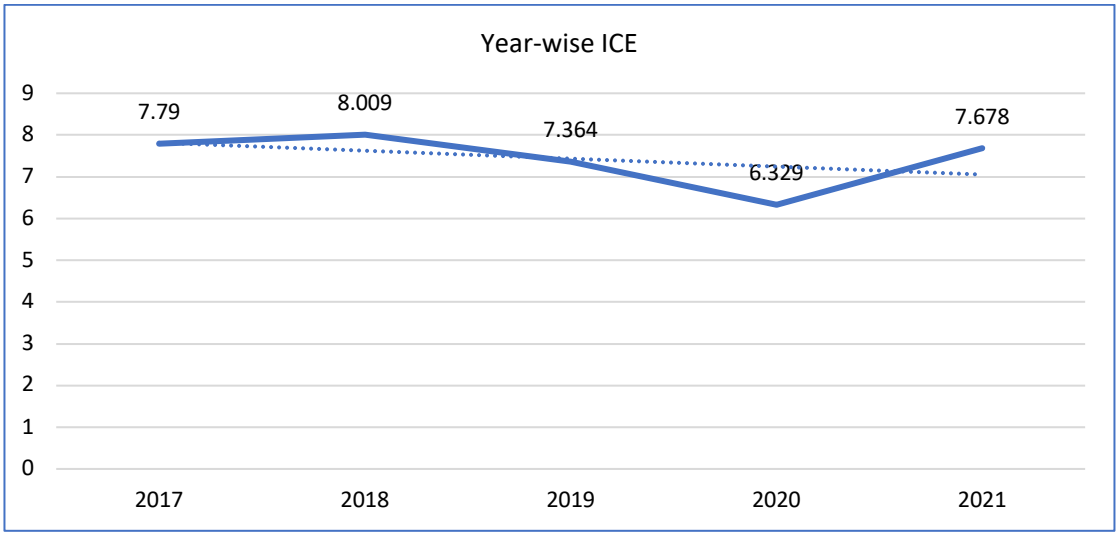


**Figure 1.3: ICE value with trend analysis**

The overall trend of structural capital efficiency can be seen in detail in Figure 1.5. According to the chart, structural capital fluctuated widely over the years. However, like previous IC elements, it also shows a downward trend. Compared to 2017, SCE's performance was much better in 2018 but collapsed again in the next year. Interestingly, while HCE performance declined drastically in 2020, firms survived through structural efficiency because structural efficiency in 2020 has added more value compared to other years. Nevertheless, the disappointing point is that in 2021 this sort of performance deserved progress.

In Bangladesh, the relational capital of non-financial companies is relatively insignificant, as described in the prior section. Nevertheless, the hope is that companies with distressed relational capital are trying to recover slowly. Figure 1.6 shows an upward trend in RCE from 2017 to 2021. In 2017 the value of RCE was 0.165, which dropped very little in the next two years. Nevertheless, it was upward and reached the highest level in 2020. At that time,

companies invested a lot of money in relational capital. Late 2021, once the COVID-19 situation normalized, fund allocation of this sector reduced again. Thus, the opportunity to add value from here starts narrowing.

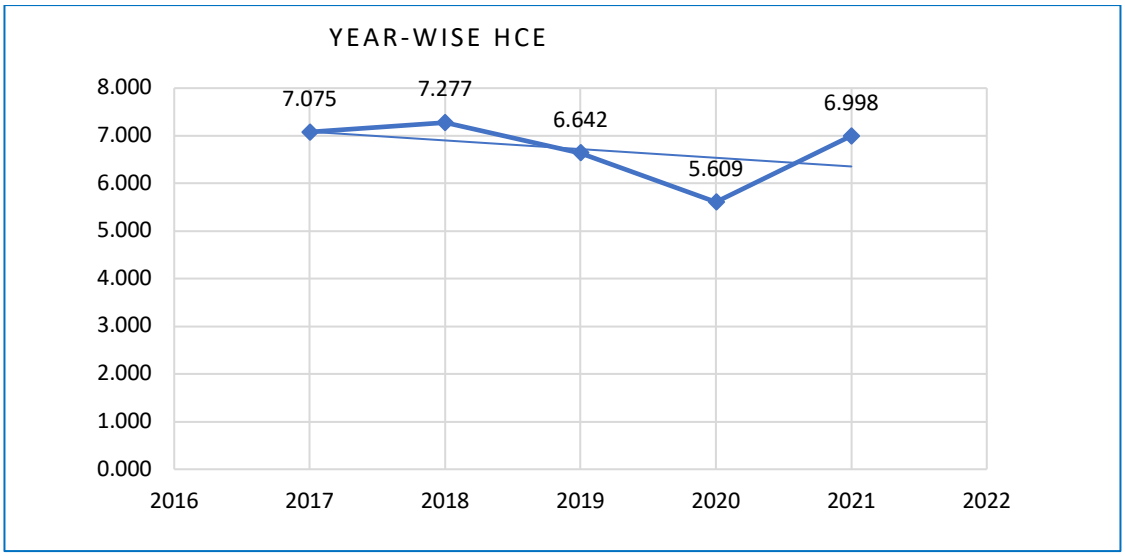


**Figure 1.4: HCE value with trend analysis**

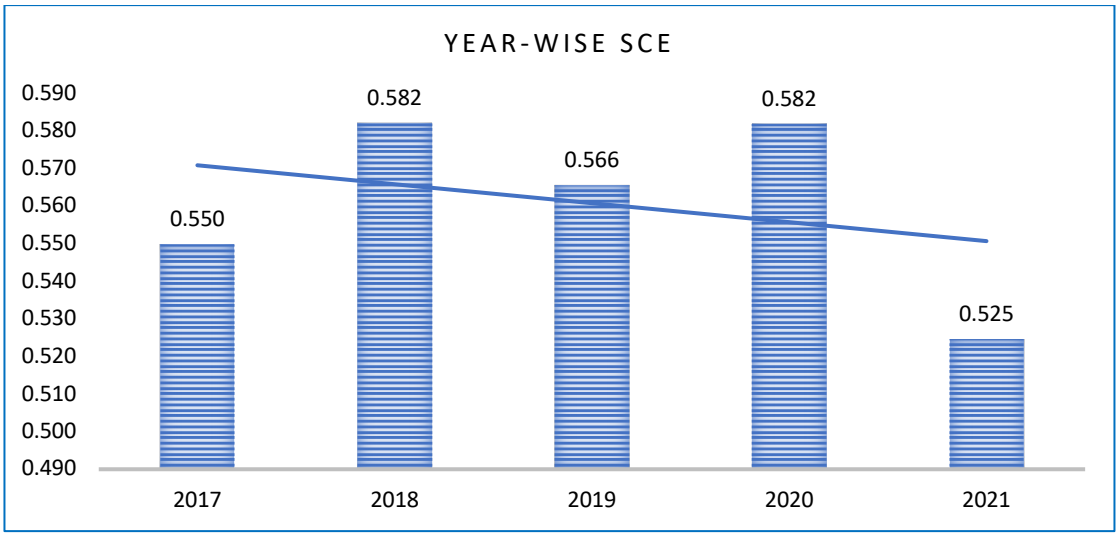


**Figure 1.5: SCE value with trend analysis**

From the data in Figure 1.7, we commented that the efficiency of visible properties, like other IC elements, also shows a downward trend from 2017 to 2021. Analyzing the data for different years, we find that CEE performance is good in a particular year but alarming in the next year. It got better again in the following year. Thus, non-financial companies are leveraging their tangible assets through boom-and-bust cycle. However, companies need to utilize their physical and financial capital properly daily.


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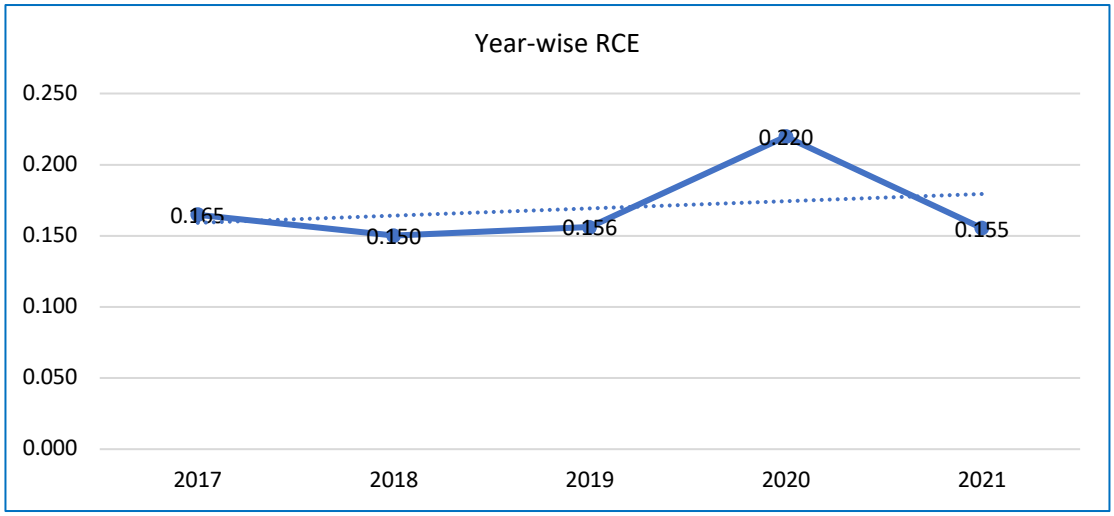


**Figure 1.6: RCE value with trend analysis**

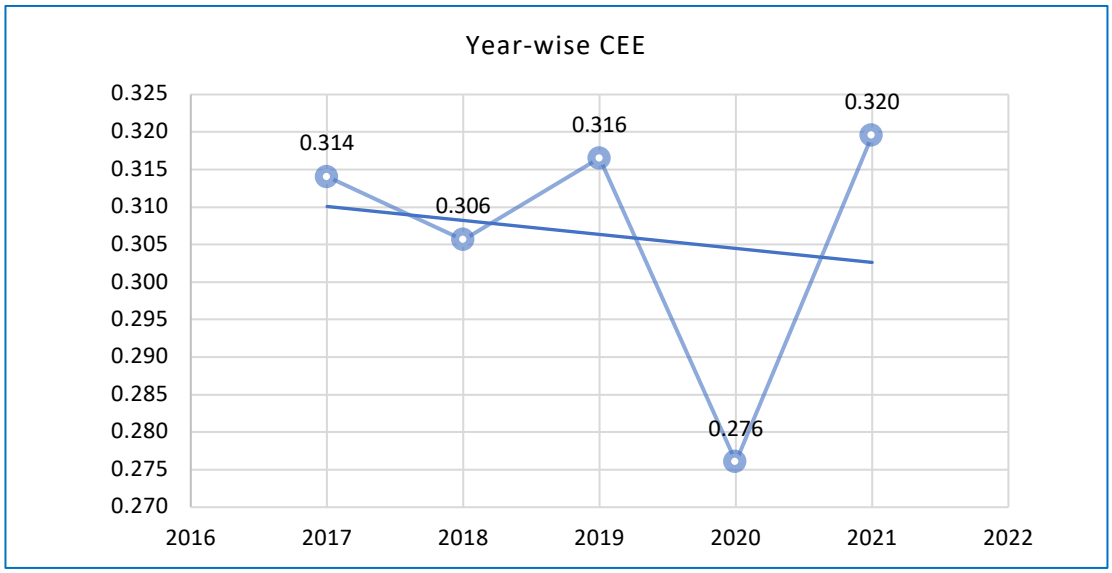


**Figure 1.7: CEE value with trend analysis**

Again, the financial and physical capital, i.e., tangible assets, cannot contribute appropriately in terms of productivity and value addition to the firm. The performance of 2020 was the most significant proof that the CEE value was above 0.3 in other years, but it dropped to 0.276 in that year. Consequently, companies must strive to achieve the organization's overall goals by appropriately utilizing intangible and tangible assets.

**Analysis of Industry-based Intellectual Capital Value**

Eleven industries have been considered as samples in the present study. At this stage, various charts are used to analyze the IC performance of those industries in detail. Before the study results, we acknowledged that human capital efficiency greatly impacted overall IC value and found similar outputs from Figures 1.8 and 1.9.

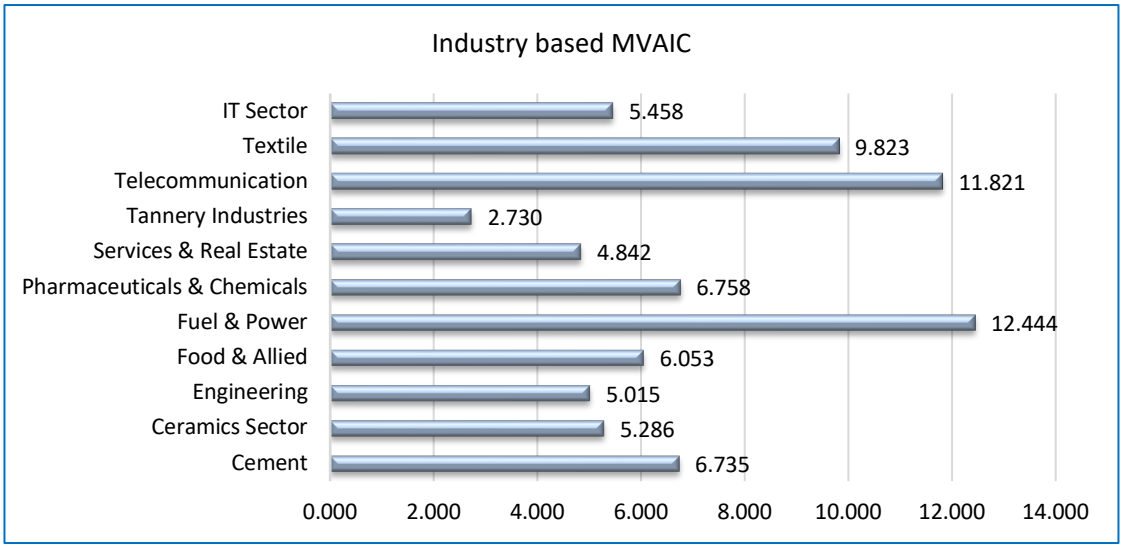


**Figure 1.8: Industry-based MVAIC value presentation**

Among the 11 industries, the fuel & power industry has the highest MVAIC and HCE score. That is, they can add more than 12 times more value to the industry than they spend on human resources. Again, the telecommunications industry added 11.821 times more value than it spends on human resources. Among the mentioned industries, the textile industry can increase the organization's productivity by utilizing its human resources to a large extent. In this case, they can add about 9.823 times more value using human resources per taka. Other industries showed similar performance on average, and the MVAIC scores ranged between 4.842 and 6.758. In this case, the only exception is the Tannery industry, for has the lowest overall IC performance (MVAIC = 2.73).

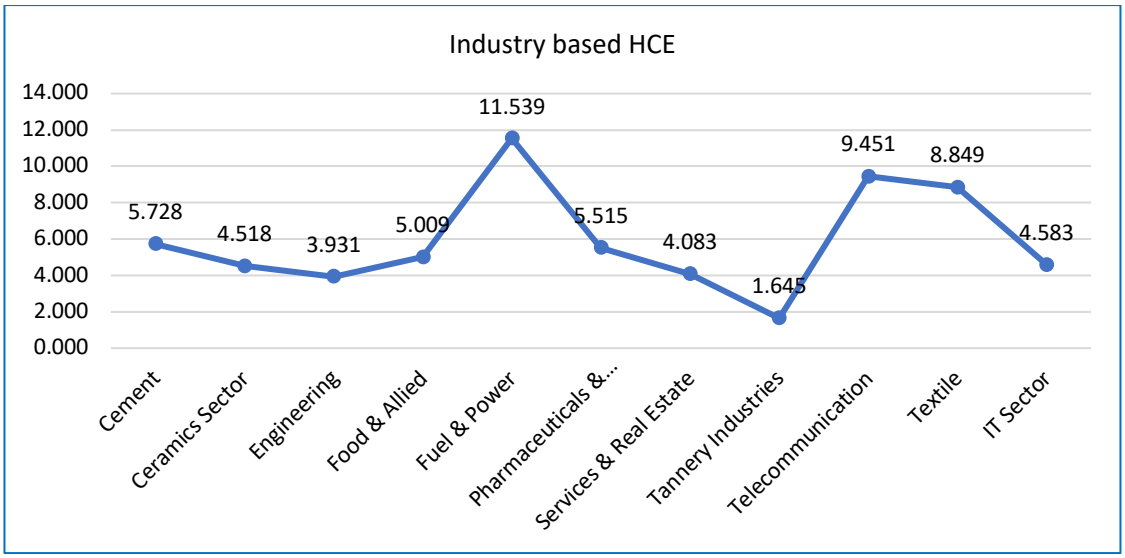


**Figure 1.9: Industry-based HCE value presentation**

Figure 1.9 shows the HCE amount of different industry sectors. The chart reveals that the Fuel and Power industry has used human capital most efficiently (HCE value = 11.539). The telecommunication & textile industry is also highly skilled in this respect. These two industry


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sectors added value amounting to Tk. 9.451 and Tk. 8.849 per Taka of human resource management costs, respectively. The tannery industry needs to improve its human capital utilization. This industry added a value of 1.645 taka from per taka investment. However, human resource management is quite efficient in other industries. Their HCE values fluctuate between 3.931 and 5.728, rated as good performers.

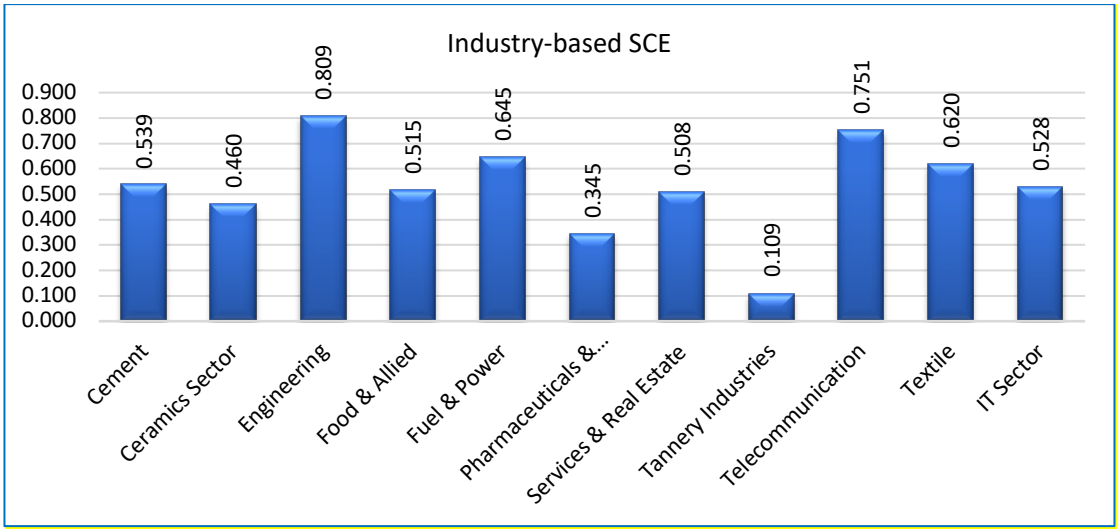


**Figure 1.10: Industry-based SCE value presentation**

From Figure 1.10, the analysis of non-financial industries in Bangladesh shows that the engineering industry is the best in increasing structural capital efficiency as their SCE value is 0.809. Similarly, the SCE of the Telecommunications Industry is 0.751. That is, the SCE performance of the engineering and telecommunications industries is much better. The fuel and power industry are the third highest (SCE = 0.645), and the textile industry occupies the fourth highest value (SCE = 0.620).

In contrast, there is evidence of considerable weakness in the structural efficiency of the tannery industry. Its SCE value is the lowest (0.109) among the industry sectors used in the sample. For other industrial sectors, SCE performance can add approximately the same value, ranging from 0.345 to 0.539.

Figure 1.11 shows that the pharmaceutical and chemical industry can use its relational capital better. In this case, it added the value of Tk. 0.33 per taka of investment in this perspective. Also, the tannery and cement industry used its relational capital well (RCE value is 0.233). Again food & allied industry sector can also manage the relational capital efficiently (RCE value 0.215). However, the relational efficiency of the fuel and power industry is comparatively very weak (RCE value 0.083). Other industries indicate nearly similar RCE values, ranging from 0.087 to 0.177.

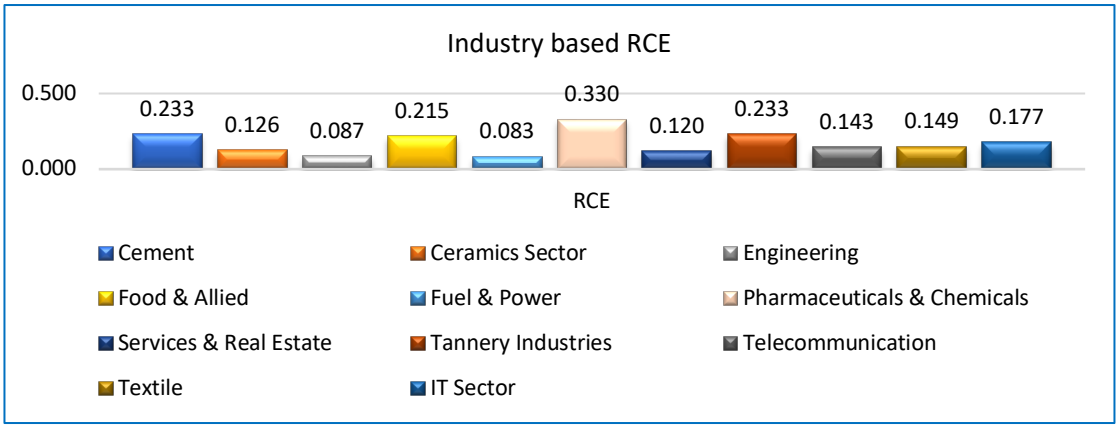


**Figure 1.11: Industry-based RCE value presentation**

There is an urge to properly utilize invisible and visible capital for the overall development of firms. Figure 1.12 revealed that the telecommunications industry used its physical and financial capital efficiently. This industry added value to BDT. 1.476 for per taka invested in visible capital. The tannery industry also strived to utilize its physical capital with the highest effort.

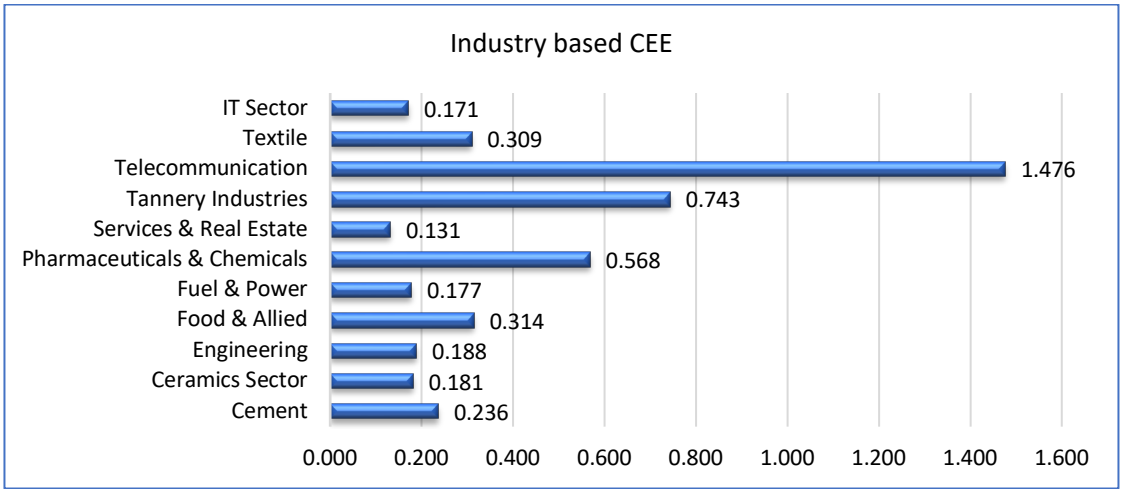


**Figure 1.12: Industry-based CEE value presentation**

However, their intellectual efficiency could be higher (as mentioned earlier). The pharmaceutical and chemical industry also strives to manage its physical capital considerably. In this case, this sector added a value of Tk. 0.568 per taka of visible capital. Otherwise, services and real estate industries need to manage visible capital efficiently. They added value only Tk. 0.131 per taka of visible capital. Other industries typically added value as low as Tk. 0.171 to Tk. 0.314. These industries need to increase the efficiency of visible capital by investing every taka of visible capital.

## CONCLUSION

The objectives of this research are to evaluate IC value, trends of IC performance for all the components, and find out the industrial sectors that are managing the IC efficiently. Results revealed that Bangladeshi nonfinancial firms' average MVAIC score is good, which suggests better IC management. Year-wise IC performance shows that all IC elements except relational


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capital have a declining trend during the study periods. Our industry-wise research showed that telecommunications, fuel & electricity, and textile industries have efficiently used intellectual, human, and structural resources. However, the telecommunication sector has efficiently exploited its physical and financial capital. The pharmaceutical, chemical, cement, and tannery industries have strived to maximize relational resources. However, the tannery industry could have used its people and structural resources better.

Our research offers new insights into the resource-based and resource-dependence theories. Investments in physical and intellectual capital increase a firm's value and probability for survival, which are essential for retaining a competitive edge over the long term. Due to its importance as a key and thriving business asset, IC has quickly become a pivotal field of study. Value creation and increasing business performance are two areas where scholars have already highlighted the importance of IC. Merged with earlier studies, the findings from our research will help the government, policymakers, and investors in association with business executives of non-financial companies strive to increase the value, profitability, and sustainable growth of these firms.

The present study adopted data from non-financial firms listed on the DSE in Bangladesh. We have used information from 345 separate observations for this analysis. Our findings shed light on the valuation of intellectual and physical assets of non-financial firms in Bangladesh. Still, there are numerous avenues to explore this topic further. To begin with, future researchers may expand the research period and add more samples representing non-financial companies. It is also possible to use all financial and non-financial companies. Besides, studies on textile, pharmaceutical, chemical, cement, information technology (IT), banking, etc. can be conducted separately.

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