INTELLECTUAL CAPITAL PERFORMANCE: EVIDENCE FROM TOURISM AND HOSPITALITY INDUSTRY

Cindy Olivia Angkasaputra¹, Arya Aji Aditya², Nur Azizah³
Universitas Airlangga¹², Politeknik Negeri Malang³
¹Corresponding author: cindy_o@rocketmail.com

ABSTRACT
The purpose of this study was to determine the impact of intellectual capital on financial performance in Indonesia’s hotel, restaurant, and tourism industries from 2018 to 2020. Annual reports from www.idx.co.id for 2018 until 2020 were used as secondary data. The sampling method was purposive sampling. Multiple linear regression analysis showed that structural capital and capital employed affected financial performance, but human capital did not. Based on the analysis result, we can conclude that businesses in the tourism sector must prioritize the role of strategic resources in their organizations, particularly intellectual capital, during Covid-19. Given that tourism business operations rely heavily on the abilities and knowledge of human resources.

Keywords: financial performance, intellectual capital, tourism and hospitality industry
1. Introduction

Digitalization has ushered in a new era of business competition. Businesses compete to develop innovations for various reasons, including increasing company value, streamlining organizational performance, enhancing departmental integration, and attracting investors (Brüggen et al., 2009; Asiaei and Jusoh, 2015; Gupta and Raman, 2021). The company innovates for the benefit of the company and the customer. Digitalization entails enhancing the customer experience and streamlining services via company-developed features such as mobile applications, e-commerce, and website features (Warmayana, 2018; Simanjuntak et al., 2021). The customer can review the company directly through the developed features and receive a score indicating the organization's performance in customer experience.

Digitalization has had a noticeable impact on the hotel, restaurant, and tourism industries. The marketing mix benefits companies that manage an industry. For instance, the hotel industry can advertise its services on e-commerce platforms such as Agoda and partner with the Reddoorz hotel chain. The restaurant industry is then spoiled by online transportation companies such as Gojek and Grab that offer online food delivery. As with the hotel industry, the tourism industry benefits from e-commerce platforms such as Traveloka, which make booking travel tickets and accommodations simple for customers. These characteristics exist as a result of the process of developing a business through the use of knowledge, where knowledge is a type of intangible asset that has the potential to become a new source of financial performance (Pulic, 2004; Bontis et al., 2015).

The novel coronavirus (COVID-19) spread in December 2019 in Wuhan, China, and the virus's transmission to Indonesia in March 2020 rocked the entire business industry. The outbreak marked the start of a downward trend in the hotel, restaurant, and tourism industries' financial performance. Hotel, restaurant, and tourism-related businesses are not immune to financial losses, operational inefficiencies, and service disruptions (Kemenparekraf, 2020). According to the Pusat Data dan Sistem Informasi Kemenparekraf (2021), hotel occupancy rates reached around 20% during the first six months of the COVID-19 pandemic. The restaurant industry saw a decline in turnover of up to 90% due to the COVID-19 pandemic, eating-in violations, and restrictions on the number of customers and opening hours (Rabbi, 2021). Worse yet, tourism must be suspended due to the closure of tourist attractions (Rosidin, 2021).

Businesses must develop strategies to remain operational. Funds allocated for digitalization development, collaboration with e-commerce, employee training, and education are redirected to operating funds to improve the company's financial performance (Singh and Neog, 2020; Yarovaya et al., 2021). Along with the money transfer, employees were reduced for operational efficiency (Zhong et al., 2021; Borghouts–van de Pas et al., 2021). Due to the diversion of funds and the reduction in employee numbers, the hotel, restaurant, and tourism industries are undoubtedly experiencing a decline in intellectual capital.

This study aims to investigate intellectual capital's effect on financial performance in the hotel, restaurant, and tourism industries in Indonesia. This study builds on previous work by Babajee et al. (2020) and Silva et al. (2021). If we follow Babajee et al.'s (2020) advice in the subject selection, they explained that the potential for high intellectual capital
existed not only in banking firms but also in the hotel, restaurant, and tourism firms that had face-to-face interactions with customers. We used the multiple regression method Soewarno and Tjahjadi (2020) developed to test the study variables in this study.

2. Literature Review and Hypothesis Development

The resource-based approach is one of the most widely used theories for conceptualizing the impact of an organization's intangible assets on its performance (Aminu and Mahmood, 2015). According to resource-based theory, a company's internal resources, particularly its human resources, can be a source of competitive advantage (Davis, 2017). Dahash and Al-Dirawi (2018) discovered a significant relationship between intellectual capital and competitive advantage in Iraqi hotels. Intellectual capital is one of the most closely related assets to the performance and competitive advantage of small and medium-sized enterprises operating in the tourism industry in Azad Jammu and Kashmir, Pakistan (Khalique et al., 2020). They must prioritise intellectual capital to maintain the competitive edge of tourism and hospitality industries. The loss of intellectual capital will affect the company's performance, as intellectual capital is directly related to the ability of the company to work and develop (Omerzel and Jurdana, 2016).

According to some experts, such as Stewart (1997), intellectual capital (IC) is a collection of intellectual assets, such as knowledge, information, intellectual property, and experience, that can be combined to generate wealth. According to another expert, Sullivan (1998), IC is a resource of knowledge that can be converted into profit. Additionally, the definition of IC is not stated explicitly in PSAK 19 concerning intangible assets. However, there is no conclusive definition of intellectual capital at the moment, and there is still debate among experts, as intellectual capital is a relatively new management concept that is still confusing (Purnomosidhi, 2005). Other definitions of intellectual capital, such as Purnomosidhi (2005), consider intellectual capital to be a mysterious value between the company's book and market values. Pulic (2000), Nazari and Herremans (2007), Melani (2015), and Ulum (2017) argue that the essence of IC is the process of value creation in the context of the efficiency and effectiveness of company resources in adding value to the company. As the preceding definition implies, IC is a value associated with the efficiency and effectiveness of a business's resources. As one of the company's intangible assets, IC is a component of innovation and affects the company's performance (Omerzel and Jurdana, 2016). Additionally, IC affects the ability of a business to work and develop. IC is the primary generator of value for a business, contributing to its competitive advantage (Ognjanovi, 2017; Dalwai and Mohammandi, 2020).

The three types of IC are human capital, structural capital, and relational capital. According to Stewart (1997), elements of IC can be categorized as follows: human capital is innovation in the manufacture of products and services or improvisation in the business processes; structural capital is the renewal of technology, data discovery, strategy, and culture; structures and systems as well as activities within the organization; and customer capital is value in the relationship between the company and its customers, such as market share, customer retention, and customer profitability. Dalwai and Mohammandi (2020) define human capital as current and prospective employees, structural capital as organizational processes, routines, and corporate culture that support business operations,
and relational capital as customer and supplier relationships. The VAIC method determines the value-added efficiency level based on its use of tangible and intangible assets (Costa et al., 2020). VAIC is the sum of indicators such as human capital efficiency, structural capital efficiency, and the effectiveness of equity in creating added value.

The conceptual framework of the research is depicted in Figure 1. Many studies examine the effect of intellectual capital on financial performance without focusing on the hospitality industry and support hypothesis development. Human capital is a critical component of tourism and hospitality businesses. Due to the high level of interaction between employees and customers, businesses must recruit highly skilled and educated employees according to their fields. According to Kweh et al. (2019), human capital is the strategic resource that enables organizations to maintain a sustainable competitive advantage in rapidly changing environments. Maji & Goswami (2017) and Xu & Liu (2020) previously demonstrated that HCE had a beneficial effect on ROA using the VAIC, M-VAIC, and E-VAIC as measurement proxies.

Structural Capital Efficiency (SCE) is a significant predictor of ROA, where any increase in SCE would result in a much higher ROA (Bayraktaroglu et al., 2019). Research by Sardo et al. (2018) stated that investment in structural capital is important for the financial performance of SME hotels and can increase long-term relationships with key stakeholders. Silva et al. (2021) studied Portugal's tourism and hospitality industries and found that CEE had a statistically significant effect on ROA. Capital Employed Efficiency (CEE) can be a source of value creation when ROA is used as an indicator of value creation. Thus, based on the arguments above, the following hypotheses can be formulated:

H1: Human Capital Efficiency (HCE) affects Return on Asset (ROA)
H2: Structural Capital Efficiency (SCE) affects Return on Asset (ROA)
H3: Capital Employed Efficiency (CEE) affects Return on Asset (ROA)

Figure 1. Research Framework
3. Research Methods

This study uses secondary data sources from annual reports from the hospitality industry, which can be accessed via www.idx.co.id. The study’s population comprises the hotel, restaurant, and tourism businesses and 24 publicly traded companies on the Indonesian Stock Exchange (IDX). The sample is drawn from annual reports published from 2018 to 2020 by the hotel, restaurant, and tourism companies listed on the IDX. A purposive sampling method was used to collect data for this study. Purposive sampling requires that the company report financial statements consecutively from 2018 to 2020 and include the information required for this study in its financial statements. This study’s final sample size was 72.

VAIC is a comprehensive measure of intellectual capital based on the VAIC model developed by Pulic (2004). Value added is the value obtained by calculating the difference between the company's output and input. The first step is to calculate the value-added (VA) using the following formula:

\[ VA = OP + EC + D + A \]

Value-added (VA) is the sum of operating profit (OP), employee costs (EC), depreciation (D), and amortization (A). The second step is to calculate VAIC, which consists of intellectual capital efficiency (ICE) and capital employed efficiency (CEE):

\[ VAIC = ICE + CEE \]

Intellectual capital efficiency (ICE) is the sum of human capital efficiency (HCE) and structural capital efficiency (SCE).

\[ ICE = HCE + SCE \]

Then, the intellectual capital component is calculated using the following formula:

\[
\begin{align*}
HCE &= \frac{VA}{HC} \\
SCE &= \frac{SC}{VA} \\
CEE &= \frac{VA}{CE} \\
VAIC &= HCE + SCE + CEE
\end{align*}
\]

HCE is the VA/HC ratio. The total salary and wages represent HC (human capital). SCE is the SC/VA ratio. SC (structural capital) is the difference between VA and HC. CEE is the VA/CE ratio. CE is the book value of the total assets. VAIC represents the intellectual capital value-added coefficient.

The dependent variable in this study consists of ROA, which is calculated by profit after tax/total assets. The independent variable consists of VAIC components, namely HCE, SCE, and CEE. The control variables in this study consist of leverage (LEV) calculated by total debt/total assets, company size (SIZE) calculated by the natural log of total assets, company age (AGE) calculated by company age, and price-to-book value ratio (PBV) calculated based on market price value/book value.
Referring to the formulation developed by Soewarno and Tjahjadi (2020), the regression model can be formulated as follows:

\[
ROA = \beta_0 + \beta_1 HCE + \beta_2 SCE + \beta_3 CEE + \beta_4 LEV + \beta_5 SIZ + \beta_6 AGE + \beta_7 PBV + \varepsilon \quad \ldots \quad (1)
\]

where:
\( \text{ROA} = \text{Return on Assets}; \text{HCE} = \text{Human Capital Efficiency}, \text{SCE} = \text{Structural Capital Efficiency} \)
\( \text{CEE} = \text{Capital Employed Efficiency}; \text{LEV} = \text{Leverage}; \text{SIZ} = \text{Company Size}; \text{AGE} = \text{Company Age}; \text{PBV} = \text{Price-to-book ratio}; \beta = \text{regression coefficient}; \varepsilon = \text{error} \)

4. Findings and Discussions

As shown in Table 1, the data processed 72 with a mean ROA of 1.3525 and a standard deviation of 4.97246. The mean value of HCE is 0.9417, and the standard deviation is 2.40758. The mean of SCE is 0.9192, and the standard deviation is 2.20880. The mean of CEE is 0.1831, and the standard deviation is 0.32746. The mean of PBV is 54.9768, and the standard deviation is 411.17534. The mean of AGE is 27.6528, and the standard deviation is 12.90394. SIZE is 10.2421, and the standard deviation is 2.65193. LEV is 0.6674 and has a standard deviation of 0.63169.

| Table 1. Descriptive Statistics. |
|-------------------------------|------------------|
| **Mean** | **Std. Deviation** |
| ROA 1.3525  | 4.97246 |
| HCE .9417  | 2.40758 |
| SCE .9192  | 2.20880 |
| CEE .1831  | .32746 |
| PBV 54.9768 | 411.17534 |
| AGE 27.6528 | 12.90394 |
| SIZ 10.2421 | 2.65193 |
| LEV .6674  | .63169 |
| Source: Data processed |

The effect of HCE, SCE, and CEE on the company financials measured by ROA and control variables measured by PBV, AGE, SIZE, and LEV was determined using multiple linear regression analysis. The results of the hypothesis are shown in Table 2; HCE has no effect on ROA in the model, implying that H1 is rejected. These findings indicate that the industry has not well-managed human resources optimally in hotels, restaurants, and tourism-related businesses. The model demonstrates that the SCE affects ROA so that H2 is accepted. Also, CEE affects ROA, demonstrating the critical nature of running management in companies engaged in the hotel, restaurant, and tourism industry to ensure that they operate efficiently and support H3. The model demonstrates that certain elements have no significant effect on the control variable, such as only PBV that can affect ROA. In contrast, AGE, SIZE, and LEV do not affect the company's ROA.

The F test is used to determine the effect of overall intellectual capital on ROA, as proxied by the value of VAIC. According to table 2, the F test significance is 0.000, and the F value is 13,093, indicating that the independent variables HCE, SCE, CEE, and the control variables PBV, AGE, SIZE, and LEV all affect ROA concurrently.

54
The t-test result shown in table 2 indicates that HCE has a significance value of 0.109, which is greater than 0.05, indicating that it does not affect ROA. The significance value for SCE is 0.002, and CEE has a significance level of 0.000, indicating that both elements significantly affect ROA. The control variable result PBV has a significant value of 0.004, and PBV significantly affects ROA. While AGE has a significance level of 0.460, SIZE has a significance level of 0.423, and LEV has a significance level of 0.095, which is greater than 0.05 and indicates that it has no significant effect on ROA.

Table 2. Test of Hypothesis and t-test.

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constanta</td>
<td>-1.357</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCE</td>
<td>.191</td>
<td>1.630</td>
<td>.109</td>
</tr>
<tr>
<td>SCE</td>
<td>.326</td>
<td>3.196</td>
<td>.002</td>
</tr>
<tr>
<td>CEE</td>
<td>7.148</td>
<td>8.724</td>
<td>.000</td>
</tr>
<tr>
<td>PBV</td>
<td>-.002</td>
<td>-3.010</td>
<td>.004</td>
</tr>
<tr>
<td>AGE</td>
<td>.014</td>
<td>.744</td>
<td>.460</td>
</tr>
<tr>
<td>SIZ</td>
<td>.076</td>
<td>.807</td>
<td>.423</td>
</tr>
<tr>
<td>LEV</td>
<td>-.704</td>
<td>-1.701</td>
<td>.095</td>
</tr>
</tbody>
</table>

R Square = 0.642
F Test = 13.093
Adjusted R Square = 0.593

Source: Data processed

According to annual comparisons, as shown in Table 3, the average HCE for 2018, 2019, and 2020 is 0.55, 1.76, and 0.51, respectively. In 2019, the highest HCE value was observed. They were 1.32, 9.66, and 0.78 in SCE in 2018, 2019, and 2020, respectively. The highest HCE value was observed in 2019, while the lowest SCE value was found in 2018. In contrast, CEE exhibits a more stable pattern, with values of 0.21, 0.23, and 0.11 for 2018, 2019, and 2020, respectively.

Table 3. Annual Comparison of VAIC Components.

<table>
<thead>
<tr>
<th>Year</th>
<th>HCE</th>
<th>SCE</th>
<th>CEE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>.55</td>
<td>1.32</td>
<td>.21</td>
</tr>
<tr>
<td>2019</td>
<td>1.76</td>
<td>.66</td>
<td>.23</td>
</tr>
<tr>
<td>2020</td>
<td>.52</td>
<td>.78</td>
<td>.11</td>
</tr>
</tbody>
</table>

Source: Data processed

The value of R-Square is 0.642 in Table 2, indicating that the variables LEV, SIZ, AGE, SCE, PBV, HCE, and CEE have a 64.2 percentage effect on ROA, with the remainder coming from other variables not included in the study model. Along with the coefficient of determination, there is a correlation coefficient that indicates the magnitude of the relationship between the independent variables. The R-value of 0.802 indicates the magnitude of the relationship between the independent variables. This correlation value indicates that the relationship between the independent and dependent variables is quite strong.

The insignificant HCE indicates that companies in the hotel, restaurant, and tourism industries have not been able to optimize human capital to generate performance for their
companies. Companies are less able to utilize the thinking abilities of employees to create value for the company (Dewi & Setyowati, 2015). Hotel management may be responsible for the insignificant contribution to human capital by paying less attention to providing training and educational courses for their employees (Khaliq & Mansor, 2016). Investment in human capital can motivate employees to work harder; one method of increasing human capital is providing on-the-job training to improve employee capabilities and skills, allowing employees to contribute more to increasing productivity and company performance goals (Bardarova et al., 2013). Where the financial performance of the hotel, restaurant, and tourism industry companies on the IDX in 2018-2020 proves the significant influence of the HCE variable where in this industry, the dominant products are services or intangible goods, which are, of course, generated from calculated human capital from HCE. This follows the RBV theory stated by Wernelfelt (1984) that if a company can hold, control, and use strategic assets and capital; it can increase competition, especially in the same industry, where human capital in this industry is included in strategic capital.

Companies need to realize organizational processes that support business operations. Corporate culture is part of organizational capital, where a strong corporate culture can instil employee competence and motivate employees to serve the company and customers (Kim et al., 2011). SCE can be realized by the hotel, restaurant, and tourism industries using technology. Technology bridges companies in realizing digitalization, which can also be used during the COVID-19 pandemic. By implementing digitization, companies can reach customers and more easily access hotel, restaurant, and tourism services. Moreover, Kim et al. (2011) explained that information technology could reduce distribution costs and bring customers closer to company services.

CEE must be managed properly by the company to help the company's performance properly. Physical capital is company capital in financial and physical assets that can increase added value (Wiradinata and Siregar, 2011). These physical resources have an important role in improving company performance. CEE plays an important role in a company's operation other than as a support for work and a factor in increasing profits from equity and assets owned by a company. From the results of the tests that have been carried out, it can be concluded that the performance of companies in the hotel, restaurant, and tourism industries is significantly affected by CEE, where hotel buildings and food ingredients in restaurants are two of the things that affect tourism business activities.

The VAIC, as a proxy for overall intellectual capital in a company, has a significant positive effect on ROA in hotels, restaurants, and tourism industry companies on the Indonesia Stock Exchange in 2018-2020. Another study following these results, namely the study of Gozali and Hatane (2014), found that VAIC has a positive and significant effect on ROE. This significant positive effect results indicate that the VAIC variable is included in the main factors that can significantly affect ROE. According to Kweh et al. (2019), the value-added generated by IC starts from the information that is compiled into knowledge, and the knowledge obtained is converted into intellectual capital. The VAIC calculation includes the value-added generated from the company's strategic resources so that the resulting impact can improve the company's performance. Companies can perform well if they successfully manage their resources (Xu & Liu, 2020). This study provides information for companies to determine the role of strategic resources in their company,
especially intellectual capital. This is reinforced by the hotel, restaurant, and tourism industries, which have a dominant intangible product. With good management, the value-added generated by intellectual capital in other company resources can positively influence company performance.

The findings in this study provide both academic and practical contributions. From an academic perspective, this study provides evidence on IC calculation through the VAIC method in Indonesia’s hotel, restaurant, and tourism industries. This study emphasizes the importance of human capital development, which is aligned with the resource-based theory that human capital plays a role in the company's development. From a practical perspective, this study shows that companies should maximize IC to improve their performance. In Indonesia, the hotel, restaurant, and tourism industries emphasize employee development and efforts to improve employee quality to increase the company's competitive advantage.

5. Conclusion, Implication, and Limitation

The research shows that HCE significantly affects ROA due to the empirical evidence, so H1 is rejected. But ROA is positively and significantly affected by SCE and CEE components and thus indicates that H2 and H3 are accepted. The study's implication is that hotel, restaurant, and tourism industry firms in Indonesia must prioritize and optimize the three components of intellectual capital, namely human capital, structural capital, and customer capital, to maintain a competitive advantage. The insignificant HCE can be caused by a phenomenon that occurred at the beginning of the COVID-19 pandemic, such as the termination of employees' employment so that there are obstacles to investment activities in human capital.

The study's limitation is the inability to expand the sample size because some companies do not meet the criteria for inclusion in the study sample, namely those that have not published financial statements. Subsequent studies may broaden the sampling period to acquire additional financial statement data. Furthermore, the scope of this study is limited to the hotel, restaurant, and tourism industries, even though other industries are also affected by intense business competition and the COVID-19 pandemic. The financial performance measurement employed is solely ROA. Future studies can consider examining additional industries that may justify further investigation, undertaking a comparative study between industries, and utilizing additional financial performance variables.

References


