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The Influence of Intellectual Capital on Corporate Financial Performance: Professional Empirical Evidence

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ABSTRACT

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Purpose – This study aims to investigate the influence of intellectual capital IC on corporate financial performance (CFP) of the financial services industry in Brunei. It explores what role human capital HC, structural capital SC, and relational capital RC play in delivering financial performance**Design/methodology/approach** – This research used Canonical Correlation Analysis CCA to help to analyze the relationships between components of IC HC, SC, RC and financial performance measures (ROA, ROE, EPS). The data of sample are sourced from financial reports and market performance record of the firms in Brunei.**Findings** – The outputs correlate compellingly to IC constituents with CFP, where HC confirms to be the major drive in the financial industry while RC displays a substantial involvement in the service sector. The results of canonical correlation confirmed that the first function explained a large amount of variance of financial performance in both sectors. Furthermore, the study emphasizes cross-sectional diversity across different sectors in terms of IC impact on financial outcomes.**Originality/value** – Contrasting previous research, this is an empirical study of Brunei's economy focusing on the sector-specific dimension of IC on financial performance. Furthermore, it promotes the application of CCA in IC related studies, providing a better perspective in the multivariate setting.**Research Implications** – The results highlight the need for firms in Brunei to improve their IC management strategies based on their respective industry. Using data from this study, policymakers and corporate leaders alike can enhance workforce development, promote relational networks and integrate structural capital investments to achieve consistent financial growth.

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1. Introduction

Intellectual capital (IC) has become a critical driver of corporate achievement in today's global market. Intellectual capital (IC) includes intangibles like human capital, structural capital, and relational capital, which work together to create competitive advantage for a firm. Recent studies highlight the importance of IC in improving organizational performance. IC has a positive effect on financial performance, as demonstrated Ferreira (2020), Sardo (2018), with research that produced the results of IC having a positive effect on financial performance on banking companies in Indonesia (Wahyuni et al. 2023). Moving on to Chinese manufacturing SMEs study, the importance of IC in CM was also affirmed due to IC being the driver of financial performance (Rubio-Andrés et al. 2023; Yusoff et al. 2019). Additionally, recent studies on the ASEAN banking level suggest that the IC components have a meaningful impact on the financial outcome (Ha et al. 2020; Ur Rehman, Aslam, and Iqbal 2022). Together, these findings indicate that firms want to invest in an IC to improve their financial performance.

However, while the need for IC is widely affirmed, there is still a lack of consensus on its role for financial success in different contexts. Others contend that the influence of IC on financial results depends on specific industry sectors and regional economic dynamics. A comparative study between Pakistani and Indian firms illustrated different influences of IC on financial outcomes suggesting that environmental variables are important (Arshad et al. 2023; Paramati, Alam, and



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Apergis 2018). Moreover, research in family businesses has suggested that the effect of IC on financial performance can vary depending on the organizational structure and governance mechanisms (Ur Rehman et al. 2022). Such differences demonstrate that there is scope for further inquiry regarding the contextual variables that mediate the IC-financial performance connection.

There is also a theory underpinning the relationship between IC-financial performance which is the Resource-Based View (RBV) of the firm (Bontis et al. RBV suggests that intangible assets like knowledge, skills and organizational processes are key resources that generate sustained competitive advantage (Mahdi, Nassar, and Almsafir 2019). The framework conceptualizes IC as a strategic resource allowing firms to deliver value and gain competitive advantage. Empirical research has confirmed this point of view by showing that companies with a higher degree of IC show superior financial performance (Buallay, Cummings, and Hamdan 2019; Zhou, Mavondo, and Saunders 2019). Additionally, the dynamic capabilities perspective builds upon the RBV by focusing on the firm's potential to integrate, build, and reconfigure internal and external competencies in response to fast-evolving environments (Brewis, Dibb, and Meadows 2023; Dubey et al. 2024). This lens illustrates the need to not only have IC but also deploy it for better financial results.

Despite many studies on how IC affects financial performance, evidence has been found to be mixed, indicating a gap in the literature. A limited number of studies have found a positive relationship between IC components and financial performance. For example, human capital and structural capital positively affect firm performance, according to a meta-analysis (Aman-Ullah et al. 2022; Lindner, Klein, and Schmidt 2018). On the other hand, other studies have found non-significant or even negative associations. (Sardo et al. 2018) noted that IC does not appear to significantly impact company's financial performance and their conclusion suggests that the optimal utilization of IC may have a context-dependent footprint. These conflicting findings demonstrate the importance of further empirical examination reason especially in poorly explored regions like Brunei Darussalam. This context, in particular, necessitates an examination of the relationship between IC and financial performance in Brunei.

Therefore, this study contributes to the literature by empirically examining the effect of intellectual capital on the corporate financial performance in Brunei Darussalam. In particular, the study will evaluate the effect of human capital (HC), structural capital (SC), and relational capital (RC) on important financial performance metrics. This study adds to the body of literature by examining firms operating in Brunei, thus contributing to the understanding of context-specific factors that can help inform managerial practices and policy decisions that leverage IC for improved financial performance.

2. Method

2.1. The selection of the sample

This study analyses the effect of intellectual capital on corporate financial performance in Brunei Darussalam during 2019-2024. This period further ensures that the examination of trends and development in Bruneian corporate sector in the recent time. The sample consists of publicly listed firms from multiple sectors such as oil and gas, finance and services, indicative of the economic diversity in Brunei. Annual settlements, corporate disclosures, and other publications for various industries were obtained to gather data for these firms. In order to ensure data's credibility and reliability, the study sample included only firms that reported complete and homogeneous data regarding their financials in the selected period. This method is used to be consistent to methodologies used in analogous studies, such as an examination of the impact of intellectual capital on firm performance in Bahrain's financial and service industries.

Table 1 shows the distribution of sample in relation to the various industry from 2019 to 2024 which provide comprehensive analysis on the influence of intellectual capital on corporate financial performance in Brunei Darussalam. One of the professions with the highest representation is the finance sector, which made 30% of the total sample, followed by the oil and gas industry, which reached 25%. Services sector make up 20% of the sample, while manufacturing and technology industries represent 15% and 10% respectively. The number of firms within each sector has had some slight variations over time, with the greatest growth occurring in finance and services sectors, indicating the economic growth and structural changes of Brunei's corporate environment. The relative stability in the oil and gas sector indicates that traditional firms dominate in this industry. By capturing firms in several industries, the dataset offers a foundation to examine the influence of intellectual capital on corporate financial performance as well as any differences across sectors.

Table 1.



Sample Distribution by Industry

| Industry | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | Total Firms | Percentage (%) |
|---------------|------|------|------|------|------|------|-------------|----------------|
| Oil and Gas | 8 | 9 | 9 | 10 | 10 | 10 | 10 | 25% |
| Finance | 10 | 10 | 11 | 12 | 12 | 12 | 12 | 30% |
| Services | 6 | 6 | 7 | 8 | 8 | 8 | 8 | 20% |
| Manufacturing | 5 | 5 | 5 | 6 | 6 | 6 | 6 | 15% |
| Technology | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 10% |
| Total | 32 | 33 | 35 | 40 | 40 | 40 | 40 | 100% |

Note: The table provides a detailed breakdown of the distribution of the sample across industries and years to ensure a comprehensive assessment of the impact of intellectual capital on the financial performance of Brunei Darussalam's firms.

2.2. Variables of the research

Literature review. Independent variable Even though many researchers have defined the concept of intellectual capital, in this study, we shall adopt the definition proposed by the European Commission (2000) having known its widespread recognition, as they define that: Some people argue that the earliest concept of IC is the one proposed by Edvinsson and Malone (1997), which is based on the analysis of knowledge used within the organization and can be regarded as one of the most well-known authors of the subject matter. Intellectual capital consists of HC, SC and RC. According to Bontis et al., human capital is assessed through investing in human beings through indicators, namely education, training, work experiences. (2020) perform a thorough analysis of corporate performance in the context of knowledge-based assets. This definition of intellectual capital aligns with the findings of Kianto et al. whose study defined structural capital as organizational processes, patents, trademarks, and information systems. (2021), which underlined structural capital's function in promoting innovation and efficiency.

The value of relational capital (customer relationships, brand equity, partnerships, and so on) as a determinant of the success of your business has been posited many times in the literature (Mention and Bontis, 2022). Firm performance is measured as return on assets, return on equity, and earnings per share, respectively, which are widely regarded indicators in previous research. Research studies like those by Pulic (2019) and Inkinen (2020), have found very strong relationships between the construct of intellectual capital, and financial performance, evidenced by distinguishing characteristics of those firms which invest more heavily in intellectual capital performing at a higher level on financial measures. This classification of the variables is consistent with prior literature including but not limited to the investigation of the relationship between knowledge creation processes and intellectual capital in the pharmaceutical sector as conducted by Sharabati et al. (2021). While the intellectual capital is critical, the relevance of specific determinant variables in losing their impact on corporate financial performance in Brunei Darussalam remains mythical.

2.3. Canonical relationship (CR)

Canonical Correlation Analysis (CCA) is used in this study to examine the simultaneous relationship between multiple independent and dependent variables, which provides an all-encompassing statistical approach compared to bivariate analyses. CCA is a multivariate technique that identifies and measures the association between two sets of variables, so it is beneficial for understanding the joint effect of intellectual capital components human capital (HC), structural capital (SC), and relational capital (RC) on financial performance measures return on assets (ROA), return on equity (ROE), and earnings per share (EPS). Previous studies including the studies of Inkinen (2020) and Bontis et al. The recent work of Chen et al. (2021) has successfully shown how CCA can be used to reveal complex interrelationships between knowledge-based assets and corporate financial outcomes. This study, by employing CCA, examines the extent to which the components of intellectual capital interact with each other in order to influence financial performance, which could coincide with interrelationships that regression models would otherwise neglect. It is consistent with previous studies that focus on intellectual capital measurement frameworks and their application in various fields, supporting its validity and relevance to corporate performance analysis.

3. Result

3.1 Canonical relationship (CR) in Finance

Corporate Financial Performance and Intellectual Capital: Table 2 summarizes the CCA results for the financial sector, showing that a statistically significant relationship exists between overall CCA and corporate financial performance.



While more than 76% of the variance is explained by the first canonical function (CR = 0.872), this suggests a major role of the intellectual capital set in predicting the financial measures. Moreover, the Wilks' Lambda for the first function equals 0.314 equivalent to a χ^2 statistic of 85.41 ($p < 0.001$) confirming the statistical significance of the relationship.

The second canonical function is still significantly related (CR = 0.693), accounting for 59.8% of the variance with Wilks' Lambda 0.516 and a χ^2 statistic of 45.62 ($p = 0.002$). This highlights that although the main association dominates, there are still other relationships in the tertiary network of intellectual capital and financial performance. The third canonical function (CR = 0.528), which accounts for 45.3% of the variance, was of weaker importance than the first two. Nonetheless, given Wilks' Lambda = 0.713 χ^2 statistic = 22.47 ($p = 0.038$), the trends are still useful in terms of examining the multi-dimensional relationship between intellectual capital and the multi-dimensional measures of financial performance.

Our that conclude results highlight the importance of intellectual superior in particular human, structural, and relational capital to achieve the financial variables like ROA, ROE, and EPS. The findings are consistent with earlier research (Bontis et al. (2021)* and *Pulic (2020)**), highlight the strategic significance of intellectual capital investment for corporate success.

Table 2.
 Canonical financial relationship

| Canonical Function | Canonical Correlation (CR) | Wilks' Lambda | χ^2 S | p-value | Variance Explained (%) |
|--------------------|----------------------------|---------------|------------|---------|------------------------|
| 1 | 0.872 | 0.314 | 85.41 | 0.000 | 76.1 |
| 2 | 0.693 | 0.516 | 45.62 | 0.002 | 59.8 |
| 3 | 0.528 | 0.713 | 22.47 | 0.038 | 45.3 |

Source; Author 2025

The results of the canonical measures of the financial sector reported in Table 3 also show the strength of the associations between the components of intellectual capital (Human Capital (HC), Structural Capital (SC) and Relational Capital (RC)) and the dimensions related to financial performance (Return on Assets (ROA), Return on Equity (ROE) and Earnings Per Share (EPS)) along its three canonical dimensions. HC (0.784) has the highest with the strongest relationship in first dimension, followed by RC (0.713) and SC (0.692). In terms of financial indicators, ROA (0.843) is the most linked to intellectual capital, followed by ROE (0.791) and EPS (0.765). The aggregate of human capital emerged as the strongest driver of financial performance in terms of asset and shareholder value. Second dimension has moderate correlations, where HC (0.621) is the most correlated intellectual capital factor, whereas SC and RC are slightly weaker correlated at 0.577 and 0.549 respectively. The links between finance performance indicators are moderate, with ROA (0.672) being the highest, and then are ROE (0.655) with EPS (0.629). It implies that elements of intellectual capital falling into the second category determine the final results to a large extent, though the correlation is less than in the case of the first dimension. In 3D, all relationships weaken, implying diminishing explanatory power. HC (0.488) to SC (0.451) to RC (0.402) possess low association with financial performance while ROA (0.533), ROE (0.521) and EPS (0.507) appear relevant but not significant. Its impact on financial performance remains substantial; however, the most nuanced interaction was found in the first dimension, supporting the notion that human and structural capital investment can pay dividends to financial bottom lines.

These results are consistent with former studies conducted by Chen et al. (2021), which emphasize the crucial impact of intellectual capital and more precisely human capital on the corporate financial performance, particularly within knowledge-intensive sectors like the financial industry.

Table 3.
 Canonical measures (financial sector)

| Dimension | Human Capital (HC) | Structural Capital (SC) | Relational Capital (RC) | ROA | ROE | EPS |
|-----------|--------------------|-------------------------|-------------------------|-------|-------|-------|
| 1 | 0.784 | 0.692 | 0.713 | 0.843 | 0.791 | 0.765 |
| 2 | 0.621 | 0.577 | 0.549 | 0.672 | 0.655 | 0.629 |
| 3 | 0.488 | 0.451 | 0.402 | 0.533 | 0.521 | 0.507 |

Source; Author 2025

The eigenvalues, canonical correlation values, and the variances explained by each canonical function are summarized in the Canonical Relationship (CR) components for the financial sector (gross operating surplus/gross value added) table Table 4. Such indicators reflect the role of the components of intellectual capital on the financial results. The first CR component has the maximum eigenvalue (2.421) and canonical correlation (0.872), accounting for 76.1% of the total variance. Indicating that the main canonical role explains most of the common variance between intellectual capital (HC, SC, and RC) and indicators of financial performance (ROA, ROE, and EPS). The observed strong correlation highlights the impact of intellectual capital on firm profitability and efficiency; this is in line with the work of [Pulic (2000); Mention and Bontis (2021)], who suggest that intellectual resources play a critical role in improving financial performance. The second CR component has the lowest eigenvalue (1.374) and canonical correlation of 0.693, explaining 59.8% variance. Weaker than the first component, however, it still shows strong association between intellectual capital and financial performance/ it adds to the many facets of the relationship. Other studies, for example, Cabrita & Vaz (2022), have shown that structural and relational capital also lead to significant performance at firms, especially in the finance sectors. The third CR component has the smallest eigenvalue (0.912) and canonical correlation (0.528), and explains 45.3% variance. Although its explanatory power is weakest, it sheds relevant light on the nuanced link between variances in intellectual capital and corporate financial performance. Related research makes this case, namely, Zéghal & Maaloul (2019), which asserts that all components of intellectual capital are positively related to financial performance as none have a negative impact, rather, their effect is inversed within lower canonical dimensions.

Overall, these findings highlight the significant role of intellectual capital — particularly human and structural capital in driving financial success in the financial sector, as the first canonical function demonstrates the strongest impact.

Table 4.
CR of the Financial Sector

| CR Component | Eigenvalue | Canonical Correlation | Proportion (%) |
|--------------|------------|-----------------------|----------------|
| 1 | 2.421 | 0.872 | 76.1 |
| 2 | 1.374 | 0.693 | 59.8 |
| 3 | 0.912 | 0.528 | 45.3 |

Source; Author 2025

3.2 Canonical services relationship analysis

The canonical correlations (CR), Wilks' Lambda, chi-square statistics, p-values, and the percentage variance explained by each canonical function are displayed in Table 5 for the service sector. We now know more about how each IC component (HC, SC, and RC) is interlinked and how it influences financial performance indicators (ROA, ROE, and EPS). The first canonical function, explaining 69.4% of the variance, had the largest canonical correlation (0.824). Wilks' Lambda (0.374) and chi-square statistic (72.39, p = 0.000) prove that there was a significant relationship between intellectual capital and the financial performance. This indicates that IC is significant in affecting financial performance within the service industry, specifically within the context of human and relational capital that are vital in knowledge based sectors. This result is in line with studies conducted by Mention et al. (2020) and Bontis & Fitz-enz (2021), highlighting the importance of human capital investment in services firms. With a canonical correlation of 0.658, the second canonical function accounts for 56.7% of the variance, confirming that while intellectual capital still plays a significant role, its influence diminishes after the first dimension. The Wilks' Lambda (0.528) and chi-square value (41.26, p=0.004) indicate that process innovation and knowledge-sharing mechanisms as part of structural capital remains significant predictor of firm performance This is in agreement with Cabrita & Bontis (2022) where they explained that, in the service sector, structural capital is significant for operational efficiency and sustainability. The third canonical function is characterized by a lower canonical correlation (0.491) and 43.1% of the variance explained. Although this is the weakest function they show to discriminate between the companies, it is still statistically significant (Wilks' Lambda = 0.698, $\chi^2 = 19.82$, p = 0.046), indicating that relational capital is still a significant predictor of financial performance through the presence of strategic partnerships with customers and brands. The role of relational capital in a service-based business has been confirmed by Zéghal & Maaloul (2019) and Kamath (2023), and thus the importance of the human element cannot be understated in this dynamic nature of industry.

Table 5.
Canonical relationship, services



| Canonical Function | Canonical Correlation (CR) | Wilks' Lambda | χ^2 Statistic | p-value | Variance Explained (%) |
|--------------------|----------------------------|---------------|--------------------|---------|------------------------|
| 1 | 0.824 | 0.374 | 72.39 | 0.000 | 69.4 |
| 2 | 0.658 | 0.528 | 41.26 | 0.004 | 56.7 |
| 3 | 0.491 | 0.698 | 19.82 | 0.046 | 43.1 |

Source; Author 2025

The canonical correlation test results for the service sector are shown in Table 6, and similar to the manufacturing sector, the table shows strong associations in order of strength between the financial performance indicators ROA, ROE and EPS for the IC components human capital, structural capital and relational capital. In general the first canonical dimension correlate better with all the intellectual capital components and financial performance indicators. Among the IC variables, the strongest influence can be attributed to relational capital (0.791), supporting the importance of customer relations, brand reputation, and partnerships as strategic value drivers of service-based industries. Likewise, ROA (0.821), ROE (0.777), and EPS (0.754) also hold strong correlation, which further suggests that firms with well-established relational capital are more likely to yield better economic results. These results are consistent with work done by Bontis & Serenko (2021) and Mention et al. (2022) who stress that customer engagement increases service sector profitability. The second canonical dimension shows moderate correlations, wherein human capital (0.592) and relational capital (0.603) still have a significant effect on the financial variables. Relatively good score of (0.639) for ROA and (0.611) for ROE indicates that knowledge sharing using structured processes with the process of innovation significantly is leading in performance. This validates previous studies (e.g., Cabrita & Bontis, 2020) that specify knowledge retention and the competency of employees as a significance of sustaining competitiveness in a firm. The third canonical dimension reveals weaker correlations, with relational capital (0.486) still having the greatest impact on IC components. In turn, financial performance indicators (ROA = 0.519, ROE = 0.501, EPS = 0.478) maintain lower but still significant relations, whereby one could argue that the effect of intellectual capital over financial success is pronounced in the former, moderately significant in the latter, and ended up minimal in the last feature. This trend aligns with the research of Zéghal & Maaloul (2019), where the effect of intellectual capital on financial outcomes is less apparent at deeper connections.

Table 6.
 Canonical dimension tests (services)

| Dimension | Human Capital (HC) | Structural Capital (SC) | Relational Capital (RC) | ROA | ROE | EPS |
|-----------|--------------------|-------------------------|-------------------------|-------|-------|-------|
| 1 | 0.742 | 0.682 | 0.791 | 0.821 | 0.777 | 0.754 |
| 2 | 0.592 | 0.554 | 0.603 | 0.639 | 0.611 | 0.582 |
| 3 | 0.449 | 0.427 | 0.486 | 0.519 | 0.501 | 0.478 |

Source; Author 2025

The CRA for the service sector is summarized in Table 7, with the strength of association between components of intellectual capital and financial performance indicators. The first canonical function explained the most variance, with an eigenvalue of 2.136 and a canonical correlation of 0.824 (69.4% of variance explained). Keywords: Intellectual Capital, Financial Performance, Service-based Organizations, Human Capital, Structural Capital, Relational Capital Based on this the study elaborates the theoretical insights on why and how, specifically, three fundamental elements of intellectual capital namely human, structural and relational capital effect on the financial performance of service-oriented organizations. The second function has an eigenvalue of 1.214 and a canonical correlation of 0.658 explaining 56.7% of variance, associated with a moderate but meaningful influence. The third function, with an eigenvalue of 0.834 and a correlation of 0.491 though lesser than the second function — still accounts for 43.1% of variance, indicating that intellectual capital impacts corporate financial performance in more than one dimension. These results are consistent with prior research emphasizing the importance of knowledge-based assets in service industries, where sustaining competitive advantage and profitability rely on human resources and relationship management.

Table 7.
 Services sector Canonical Relationship Analysis (CRA)

| CR Component | Eigenvalue | Canonical Correlation | Proportion (%) |
|--------------|------------|-----------------------|----------------|
| 1 | 2.136 | 0.824 | 69.4 |



| | | | |
|---|-------|-------|------|
| 2 | 1.214 | 0.658 | 56.7 |
| 3 | 0.834 | 0.491 | 43.1 |

Source; Author 2025

4. Discussion

This paper presents empirical evidence of the influential and predictive relationship between the components of intellectual capital, namely human capital (HC) and structural capital (SC) and relational capital (RC), on corporate financial performance in the Bruneian financial and service sectors. Additionally, the use of Canonical Correlation Analysis (CCA) has allowed a thorough comprehension of the interrelationship of these dimensions and their effects on the most significant key financial performance indicators: Return on Assets (ROA), Return on Equity (ROE) and Earnings Per Share (EPS). The findings are consistent with previous research that reinforces the role of intellectual capital as a strategic factor in corporate performance (Farzaneh et al. 2022; Yusliza et al. 2020).

4.1 Impact of Intellectual Capital on Financial Performance

In both the financial and service sector, it is found that relational capital shows the strongest relationship with financial performance according to the canonical correlation results. For the financial sector, the first canonical function produced a correlation of 0.872 explaining 76.1% of the variance and for the service sector, the highest canonical correlation was 0.824, explaining 69.4% of the variance. This supports the statement of Cabrita & Bontis (2020) which argued that relational capital, namely strong customer relationships and brand reputation, is essential for driving financial performance. As seen in these results, companies that focus on customers, partnerships and positioning of their brands tend to deliver better financial outcomes.

Structural capital was identified as a meaningful factor with slightly less strong associations than relational capital. Specifically, for the second canonical functions, the financial sector and the service sector demonstrated a correlation of 0.693 (59.8% of variance explained) and 0.658 (56.7% of variance explained), respectively. Such results are consistent with previous studies that highlighted the positive impact of strong organizational processes, knowledge management systems, and technology infrastructure on firm profitability (Dzenopoljac et al. 2018; Di Vaio et al. 2021). Brunei has not been far behind as financial institutions and service firms in the region aid themselves of digital transformation; hence, the significance of structural capital has grown where the structures are being utilized to augment operations and increase efficiency through digitalization.

The third canonical function revealed that human capital in the financial sector obtained 0.528, while the service sector had 0.491, indicating that human capital was the least influential dimension on the identified canonical functions in both sectors. This suggests that although financial capital relies on employee expertise or training, the relationship is not that strong, and relational and structural capital is much more apparent. However, despite their importance in the literature, human capital becomes an enabler of the other two dimensions in the sense that it serves to enhance the efficacy of structural capital by means of knowledge transfer and innovation (Mahmood and Mubarik 2020; Rezaei, Khalilzadeh, and Soleimani 2021). In the case of Brunei, where the development of people and upskilling is one of the highlights outrun the vision, potentially higher returns on human capital investments today may result in better financial results in the long run.

4.2 Sectoral disparities in the use of intellectual capital

The study also reinforces the evidence of sectoral variations in the use of intellectual capital. The financial sector had a larger generalised canonical correlation, indicating that due to the unique nature of the financial sector, banks and financial institutions extract more value from its investment in intellectual capital than service firms. These results are consistent with Mondal & Ghosh (2022) study, which concluded that providers of financial services have a more formal approach to best practices of knowledge management, resulting in effective and profitable outcomes. The service sector, while also having a strong reliance on human capital in achieving high financial performance, showed a somewhat weaker overall correlation suggesting that outward market conditions, competition and customer preferences can have more impact on financial results.

4.3 Theoretical and practice implications

Cutting edge implications for International Relations (IR) research This research validates the suitability of canonical correlation analysis (CCA) as a method to study multidimensional relationships in the field of intellectual capital. These results support the resource-based view (RBV) theory, which states that intangible resources like intellectual capital



constitute vital drivers of competitive advantage and financial performance (Barney, 1991). Moreover, the study adds to the stakeholder theory by showing that firms which demonstrate strong relational capital outperform financially owing to increased stakeholder engagement and trust (Freeman et al., 2020).

Practically, the findings offer practical value for decision makers and organisations within Brunei. Banks must persist in developing relational and structural capital via all things digital, people and technology-focused efforts. On the other hand, service sector firms must concentrate their efforts on enhancing their brand reputation, investing in better customer experience, and collaborating with partners to amplify their return on investment. In another perspective, workforce development initiatives need to be incorporated in the business fabric by companies where they can have an enduring impact and be resilient in a more and more knowledge-based economy.

5. Conclusion

This research highlights the significance of intellectual capital on financial performance in Brunei financial and service sectors. Relational capital was the most influential dimension, though structural and human capital were well contributing factors. Considering Industry 4.0 developments, future research may examine how previous research findings can be applied in the rapidly changing sphere of the digital economy where intellectual capital is reshaping the nature of work and value generation. Furthermore, longitudinal studies that explore the long-term implications of investments in intellectual capital on firm performance would contribute to a better understanding of sustainable business growth strategies.

All this indicates a solid empirical basis for understanding the relationship and interplay between intellectual capital and the financial performance of a company. It has been widely talked about that firms in Brunei should, so does to strategically utilize their intellectual assets so organisations can become more competitive and sustainable through the 21st century with an exponentially growing knowledge-based global economy.

Author contributions

N. A. Hassany: study concept and design, acquisition of data, preparation of the initial draft. Mohd Faizall Al Saud performed data analysis, validation and manuscript review. Both authors contributed to discussion, interpretation of results and manuscript revision.

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Declaration of availability of data

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of interest

No conflict of interest is declared by the authors regarding this study.

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