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Systematic Literature Review(SLR): The Influence of Intellectual Capital On Financial Performance in Developed and Developing Countries

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Abstract

This study examines the influence of intellectual capital on financial performance in developed and developing countries through a systematic literature review. The analysis included 35 peer-reviewed articles from 2019–2025 from databases such as ProQuest and ScienceDirect. Data extraction focused on the components of intellectual capital—human, structural, and relational—and their impact on financial metrics, including Return on Assets. Bibliometric analysis, descriptive content analysis, and simple statistics were used to identify patterns and gaps. The results indicate a generally positive effect of intellectual capital, particularly consistent in developing countries. While in developed countries, the impact is more complex and context-dependent, with human capital sometimes having a negative impact due to high operating costs. Structural capital is the most stable contributor. Innovation and political connections strengthen the influence in developing countries, while governance and digital transformation play a role in developed countries. The conclusions emphasize the critical role of intellectual capital, which differs across economic contexts and the need for tailored management strategies. Future research recommends the development of adaptive models and longitudinal studies.

INTRODUCTION

The current developments in the business world indicate increasing pressure on companies to improve their financial performance as a reflection of management effectiveness in managing their resources (Extevanus & Habiburahman, 2024; Putri et al., 2023). Good financial performance is a key indicator of stakeholder and public trust in a company, as well as a determinant of business success in facing the challenges of global competition (Regina, 2021; Supian et al., 2025). In this context, intellectual capital, which includes human, structural, and relational capital, has been identified as a strategic asset that can significantly improve a company's financial performance, particularly in developing countries such as Indonesia, Malaysia, and Vietnam (Herdianto et al., 2024; Aljuboori et al., 2021). However, reality shows that a number of companies, such as PT Timah Tbk Indonesia, have experienced declining financial performance due to declining revenue and assets, reflecting challenges in optimal intellectual capital management (Kumparan.com, 2021; Cnbcindonesia.com, 2021).

Companies in developed countries also experience declining financial performance, with different patterns and mechanisms. Studies of companies in China and European countries show that the influence of intellectual capital is more complex and not always linear. Human capital can even negatively impact certain sectors due to high operational costs (Samour et al., 2024; Dancakova & Glova, 2024). Meanwhile, structural and relational capital remain important

components contributing to corporate value creation and competitiveness in the global market (Nguyen, 2024; Yin Xu, 2025). This situation highlights the need for a deeper understanding of the differences in the influence of intellectual capital between developed and developing countries and appropriate management strategies to improve financial performance.

The main problem faced is the inconsistency and variation in the influence of intellectual capital on financial performance in the context of developed and developing countries, which has not been studied comparatively and systematically (Ayinaddis et al., 2024; Barak & Sharma, 2024). This variation includes the level of significance, the pattern of the relationship, and the mediating or moderating role of external factors such as innovation and political connections that strengthen or weaken the relationship (Cahyono & Ardianto, 2024; Joshi & Aggarwal, 2024). Furthermore, there is still a research gap regarding how human, structural, and relational capital components contribute differently to industrial sectors and their influence on financial performance across various economic contexts (Castro et al., 2021; Tran et al., 2022).

Previous research also indicates that the intellectual capital measurement models used mostly utilize VAIC or Modified VAIC, which have limitations, particularly in incorporating relational capital and adapting to local economic characteristics (Wijoyo et al., 2025; Kurniawati et al., 2020). In-depth research using a systematic literature review (SLR) approach on empirical studies in various countries is crucial for understanding patterns, gaps, and challenges in intellectual capital management and its impact on financial performance (Yen et al., 2019; Rahmadi & Mutasowifin, 2021). Therefore, this research aims to fill this gap through a systematic and comprehensive analysis.

This study aims to systematically analyze the influence of intellectual capital on financial performance in developed and developing countries through a systematic literature review approach that compares the results of various recent empirical studies (2021-2025). This research is urgent because significant differences in the patterns of intellectual capital influence impact optimal resource management strategies to improve corporate financial performance in various economic contexts. The novelty of this study lies in the comprehensive synthesis of empirical data, which has not been widely conducted in a focused manner, both between developed and developing countries. It also identifies mediating and moderating factors that strengthen or weaken this relationship, which is highly relevant for strategic management practice and the development of firm resource theory (Yousaf, 2022; Nguyen, 2024).

METHODS

This research method uses a Systematic Literature Review (SLR) approach, which aims to comprehensively synthesize the influence of intellectual capital on financial performance in developed and developing countries. The SLR method was chosen because of its ability to systematically identify, evaluate, and interpret all relevant literature, resulting in valid and reliable conclusions (Sugiyono, 2024; Creswell, 2023). This approach allows mapping of the theoretical foundations, variables, and measurement methods developed in intellectual capital and financial performance research through rigorous procedures ranging from protocol planning, literature searches in reputable databases, selection based on inclusion-exclusion criteria, data extraction, and qualitative and quantitative synthesis of results (Sudaryono, 2023; Emzir, 2024).

The primary instruments in this study were scientific articles retrieved from international databases such as ProQuest, ScienceDirect, Emerald, Wiley Online Library, and Google Scholar, which have undergone a rigorous peer-review process (Sugiyono, 2024; Creswell, 2023). Data

analysis techniques used included bibliometric evaluation and descriptive content analysis to identify patterns of findings, gaps, and consistencies in intellectual capital and financial performance variables (Sudaryono, 2023). Furthermore, simple statistical analysis was used to organize article metadata data to provide an overview of the characteristics and current research trends across geographic and industrial sectors.

The research population was all scientific articles discussing the influence of intellectual capital on financial performance in developed and developing countries published between 2019 and 2025. The research sample was selected based on certain inclusion criteria such as topic relevance, journal quality, and availability of complete data for analysis, with a total sample of 35 published articles in reputable journals as a representation of the research situation (Emzir, 2024; Creswell, 2023). The sample selection technique used the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) procedure which regulates the stages of identification, screening, eligibility, and inclusion of articles to ensure that only articles that meet quality standards and research focus are analyzed (Sugiyono, 2024; Sudaryono, 2023).

The research procedure began with the development of a step-by-step SLR protocol, which included identifying search keywords, searching articles across various databases, selecting articles according to criteria based on title, abstract, and full text, and collecting empirical findings related to intellectual capital components (human, structural, and relational capital) and their impact on financial performance metrics. The data were then systematically analyzed and synthesized in narrative form and descriptive statistics to answer the primary research question regarding the impact of intellectual capital in two country contexts (Sugiyono, 2024; Creswell, 2023). This process ensured the research findings were valid and reliable, contributing to scientific understanding and strategic management practice.

RESULTS

Based on a systematic analysis of 35 journal articles that met the inclusion criteria, the research findings are organized to comprehensively answer the research questions. This section presents an overview of the study characteristics, followed by a synthesis of the findings that specifically address the two research questions.

1. General Characteristics

Before discussing the findings, it is important to understand the research analyzed. The studies included in this review were published between 2019 and 2025, with the majority published in the last three years, indicating that the topic remains highly relevant. In terms of industry sectors, the studies cover a wide range of areas, including banking, manufacturing, insurance, technology, and services, providing a broad perspective.

The dominant methodology used is regression analysis on panel data, with the modelValue-Added Intellectual CoefficientAndModified VAICbecame the most widely adopted intellectual capital measurement approach, found in 28 of 35 studies, or 80%. For financial performance,Return on Assetswas the most popular proxy, used in 25 studies (71%), followed byReturn on EquityAndEarnings Per Share.

2. The Influence of Intellectual Capital on Financial Performance

Overall, intellectual capital has been shown to be a determining factor in a company's financial performance. Of the 35 articles analyzed,28 articles (80%) reported positive and statistically significant effects.The relationship between IC efficiency and various financial performance metrics. This finding is consistent with Resource Based Theory, where intangible resources are a source of sustainable competitive advantage.

After further analysis, this positive effect was not homogeneous across all IC components.Human Capitalshowed a positive effect in 22 studies (63%), but 5 studies (14%) reported a negative or insignificant effect, mainly in sectors with high capital intensity or in developed economies.Structural Capitalrecorded higher consistency, with 25 studies (71%) finding a positive impact on performance, confirming its role as a crucial supporting infrastructure.

TemporaryRelational CapitalThe MVAIC-measured variables demonstrated a positive influence in 15 of the 20 studies (75%) that included them, underscoring the strategic value of relationships with external stakeholders. It is noteworthy that the strength, consistency, and even direction of these relationships exhibit systematic and predictable variations when viewed through the lens of a country's level of economic development, leading to a synthesis for the second research question.

3. Differences in the Influence of Intellectual Capital between Developed and Developing Countries

Research shows that the role of intellectual capital in improving financial performance differs significantly between developing and developed countries. The differences are not only evident in its influence but also in the mechanisms and significance of each component.

To understand the geographic distribution of the studies analyzed in this article, the researchers classified the countries of origin based on the research sectors used in the articles. The following table presents the articles analyzed by country of origin:

Table 1. Comparison of the Effect of Intellectual Capital on Financial Performance: Developing Countries vs. Developed Countries

Comparative Aspects	Developing country	Developed countries
Aggregate Influence Pattern (VAIC/MVAIC)	Consistently Positive and Significant. IC acts as a major driving factor.	Complex, Conditional, and Varied. Its impact is highly context-dependent.
The Significance of Human Capital (HC)	The majority is positive and significant (85% of studies). Examples: Malaysia (Aljuboori et al., 2021), Vietnam (Nguyen, 2024).	Highly Variable. Only 55% of studies show a significant positive effect. Can be negative in the French service sector (Dancakova & Glova, 2024) due to high costs.
Significance of Structural Capital (SC)	Generally Positive (80% of studies). Good systems and procedures directly improve	Often Positive and Most Stable (78% of studies). Adequate knowledge infrastructure is key to

Comparative Aspects	Developing country	Developed countries
	efficiency. Key in Vietnam (Tran et al., 2022).	competitiveness. Example: Germany (Dancakova & Glova, 2024).
The Significance of Relational Capital (RC)	Important and Majority Positive (82% of studies). Customer/supplier relationships are a critical and rare source of competitive advantage.	Significant but Indirect Impact. Only 60% of studies show a significant positive effect. Its value is often moderated by other factors such as brand reputation.
Relationship Characteristics	Tends to be the same and Direct. The more IC investment, the better the performance.	Often Non-Linear (Inverted-U). There is an optimal investment point (Yin & Xu, 2025). Overinvestment lowers ROI.
The Role of Mediation/Moderation	Innovation (Malaysia) and Political Connections (Indonesia) as catalysts that strengthen the IC-Performance relationship.	*Corporate Governance*(China) and Digital Transformation (China) as factors that strengthen the efficiency of IC utilization.
IC Competition Intensity	Low to Medium. Companies that invest in IC can easily stand out.	Very High. IC has become a fundamental requirement based on its efficiency and integration.

DifferenceThe differences in the role of intellectual capital between developing and developed countries are shown in the table above. In developing countries, IC serves as a primary factor; investments in human, structural, and relational capital consistently yield linear performance improvements, with all three components being equally critical. Conversely, in developed countries, IC acts as a competitive sustainer, with changes that are more contextual, often non-linear, and highly dependent on allocative efficiency. Structural capital emerges as the most stable component, while human capital exhibits significant differences and can even have negative impacts due to diminishing returns. This difference reflects the varying levels of economic maturity and intensity of IC competition in the two country contexts.

Table 2. Country Research Sector

No	Country	Number of Articles
1	United States of America	1
2	Colombia	1
3	Ethiopia	1
4	China	5

5	Indonesia	2
6	India	2
7	Malaysia	2
8	Vietnamese	3
9	South Africa	1
10	French	2
11	Tanzania	1
12	Sub-Saharan Africa	1
13	Kenya	1
14	Ecuador	1
15	Panama	1
16	Chile	1
17	Thailand	1
18	Uganda	1
19	Saudi Arabia, Bahrain, UAE, Qatar	1
20	South Korea	1
21	Spanish	1
22	Czech Republic	1
23	Canada	1
24	German	1
25	United Kingdom	1
	Amount	**35**

As seen from the table above, among developed countries, China has the most publications on this topic, with 5 articles, followed by France with 2 articles, and the remaining developed countries with 1 article each. Among developing countries, Vietnam has the most publications on this topic, with 3 articles, followed by India, Indonesia, and Malaysia with 2 articles, and the remaining developing countries with 1 article each. This dominance of these countries demonstrates the significant academic attention in Asian and European countries to the issue of financial performance as influenced by intellectual capital.

DISCUSSION

a. The Influence of Intellectual Capital on Financial Performance in Developed and Developing Countries

Based on the author's literature review, findings show consistent results regarding the influence of intellectual capital on financial performance in both developed and developing countries. The role of intellectual capital as a factor that can improve corporate financial performance, both in developed and developing countries, is explored.Aljuboori et al. (2021) and Ahmed et al. (2022) in Malaysia stated that human capital, structural capital, and relational capital have a positive and significant impact on financial performance. This means that improving any one aspect of intellectual capital will directly improve SME performance. Intellectual capital is a crucial asset for manufacturing SMEs in Malaysia, but its value can only be maximized when translated into innovation capability. Investments in human capital, good systems, and external

relationships will be useless if not accompanied by the ability to create new ideas and products. Innovation is the key link connecting intellectual capital to improved performance (Aljuboori et al., 2021). Tran et al. (2022) and Nguyen (2024), who studied Vietnam, stated thatStructural capital and economic capital have a positive influence. This indicates that efficiency in the use of physical or financial assets, as well as non-human assets such as processes, systems, and structural capital, is a determining factor in the financial performance of companies in Vietnam.

In Indonesia, as in research conducted by Cahyono & Ardianto (2024), investment in human resource development and intellectual capital is crucial. However, to maximize returns, companies also need to build and utilize political relationships effectively. Political connections can create a supportive external environment, thus leveraging intellectual capital to achieve optimal performance. Research conducted by Joshi & Aggarwal (2024), which examined the Information Technology sector in India, stated that intellectual capital is not only related to past performance but can also be a reliable indicator for predicting the future financial performance of IT companies. Research by Castro et al. (2021), which examined banking companies in Colombia, showed mixed results. Increasing VAIC does not guarantee improved financial performance. Essentially, the entire banking industry relies on intellectual capital, as all banks already have high levels of IC. Differences in IC between banks may no longer be a significant differentiator in their performance.

Research conducted by Yin & Xu (2025), which focused on Chinese companies operating in the environmental and ecological protection sector, with a focus on activities related to environmental, social, and governance initiatives, found that overall IC has been proven to improve a company's financial performance. This supports the perception that intangible assets such as knowledge and expertise are strategic resources in this industry. However, this relationship is not uniform. This means that investment in IC will improve performance up to a certain point, but if overinvested, it will actually decrease financial performance because costs, such as expert salaries and R&D expenses, become excessive. Research conducted by Belkaoui (2023), which examined the United States, stated that intellectual capital is measured by the number of trademark applications filed by a company. The more trademarks a company holds, relative to other companies in the sample, the higher its future financial performance. In the Czech Republic, intellectual capital is a key asset driving improved company performance (Yousaf, 2022). Research by Ramirez et al. (2020) in Spain stated that Small and Medium Enterprises that utilize intellectual capital, namely intangible resources such as knowledge, processes and relationships efficiently achieve higher financial performance.

Research conducted by Dancakova & Glova (2024), using samples from France, Germany, and Switzerland, found that the components of intellectual capital, namely structural capital and physical capital, have a significant impact on performance, especially physical capital. Other studies have found that human capital has no effect on financial performance. This is because the results depend on the country and industry. For example, human capital has a significant effect in the German manufacturing sector but a negative effect in the French service sector. Research by Gao et al. (2024) shows that human capital has no effect on financial performance. Structural and relational capital do not show a significant effect. Physical capital is found to play the most dominant role in creating value for agricultural companies in China. Capital employed actually shows a negative and significant relationship with financial performance. These findings indicate that insurance companies in the SADC are less efficient in using their financial or physical assets to generate profits.

b. Differences in the Influence of Intellectual Capital on Financial Performance in Developed and Developing Countries

Based on the literature review, the influence of intellectual capital on financial performance shows different patterns between developed and developing countries, reflecting the level of economic preparedness and institutional characteristics of each. In developing countries such as Malaysia, Vietnam, Indonesia, and India, intellectual capital, particularly human, structural, and relational capital, consistently has a positive and significant effect on financial performance. This finding indicates that in the context of a developing economy, investment in intangible assets such as employee knowledge, internal systems, and external relationships has a significant direct impact. Moreover, in Indonesia, political relations act as a trigger that maximizes the benefits of intellectual capital by creating a supportive ecosystem. This suggests that in developing countries, intellectual capital is still at a developmental stage where each additional investment can result in significant performance improvements.

In the United States, France, Germany, and Switzerland, the effects of intellectual capital tend to be inconsistent. In the United States, for example, intellectual capital as measured by trademarks remains positive, suggesting that innovation and intellectual property protection remain drivers of performance. However, European research, such as that by Dancakova & Glova (2024), found that human capital can even negatively impact financial performance in the French service sector. These findings suggest that in advanced economies with high levels of competition and operating costs, excessive investment in human capital, such as skilled labor salaries, can lead to cost inefficiencies, thereby diminishing its positive impact.

Differences in the components of intellectual capital are also evident. In developing countries, all three components—human, structural, and relational—are often equally important and complementary. For example, in Vietnam, structural and economic capital are key, while in Malaysia, innovation acts as a bridge connecting these three components to performance. However, in developed countries, these components do not always contribute consistently. Structural and physical capital often have a more significant impact, while human capital can be insignificant or even negative, as found in the French service sector. This suggests that developed economies have reached a point where efficient infrastructure and systems are more important than simply adding a skilled workforce.

More complex changes are also evident in the form of non-linear relationships in some contexts, as found in a study conducted by Yin & Xu (2025) on ESG companies in China, where the relationship between intellectual capital and performance follows an inverted-U shape. A similar pattern is indirectly seen in findings from Colombia, where in a well-planned banking industry, high intellectual capital has become the standard and is no longer a differentiator of performance between banks. This contrasts with findings in developing countries. Thus, it can be concluded that in developing countries, intellectual capital generally plays a role as a driver of performance, while in developed countries, its role is more as a competitiveness guard that must be managed efficiently to avoid the negative impacts of overinvestment.

CONCLUSION

This study shows that intellectual capital significantly impacts corporate financial performance in both developed and developing countries, with distinct patterns and mechanisms. In developing countries, investments in human, structural, and relational capital consistently have

a significant and linear positive impact on financial performance, driven by the reinforcing role of innovation and political connections. Conversely, in developed countries, the role of intellectual capital is more complex and conditional, often exhibiting a non-linear pattern such as an inverted-U relationship, where overinvestment in human capital can lead to cost inefficiencies and lower performance. Structural capital emerges as the most stable and crucial component in maintaining corporate competitiveness in mature and highly competitive economies.

While this study successfully provided a comprehensive synthesis of 35 articles from 2019 to 2025, it faces limitations related to the predominance of sample data variations from specific industrial sectors, the use of the VAIC measurement model, which is limited in optimally capturing relational capital, and the lack of in-depth longitudinal research. Therefore, future research should develop intellectual capital measurement models that are more adaptive to local economic characteristics and embrace a longitudinal approach to understand the dynamics of the relationship between intellectual capital and long-term financial performance. The practical implications of these findings encourage companies and policymakers in developing countries to focus on managing and developing all three components of intellectual capital in a balanced manner, supported by innovation and external relationships. Meanwhile, companies in developed countries need to optimize the allocation of intellectual capital resources and increase efficiency through strategic management to avoid overinvestment that can actually hinder financial performance.

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