

The Effect of Intellectual Capital and Strategic Partnerships in Construction Companies

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Abstract: The construction industry is facing significant challenges due to globalization, increasing competition, and rapid technological advancements. In this context, intellectual capital and strategic partnerships have emerged as essential factors for the success and competitiveness of construction companies. Intellectual capital encompasses a company's intangible assets, such as knowledge, skills, experience, expertise, and relationships. At the same time, strategic partnerships involve a mutually beneficial relationship between two or more organizations that work together to achieve common goals. This paper aims to explore the effect of intellectual capital and strategic partnerships on the performance and competitiveness of construction companies. The study employs a qualitative research design and uses a literature review approach to analyse existing research and identify key concepts and themes. The findings suggest that intellectual capital and strategic partnerships can significantly improve construction companies' innovation, efficiency, and competitiveness. However, effective management and utilization of these assets require a clear understanding of the company's goals, resources, and capabilities, as well as the development of a collaborative and knowledge-sharing culture. The paper concludes by proposing future research directions and practical implications for construction companies to enhance their intellectual capital and strategic partnerships.

Keywords: Intellectual capital, Strategic partnerships, Construction industry, Knowledge management, Competitiveness

1. Introduction

The construction industry has undergone a significant transformation over the years, driven by technological advancements and increasing global competition. To remain competitive, construction companies need to focus on developing and leveraging their intellectual capital and forming strategic partnerships (Asiaei & Jusoh, 2017). Intellectual capital, which includes knowledge, skills, and expertise, has been identified as a key driver of organizational performance and competitiveness. Strategic partnerships, on the other hand, allow firms to access resources, capabilities, and knowledge that they do not possess in-house, thereby enhancing their competitive advantage (Ali *et al.*, 2021).

This paper aims to investigate the effect of intellectual capital and strategic partnerships on the performance and competitiveness of construction companies. By examining these two constructs, the study seeks to provide insights into how construction companies can enhance their performance and competitiveness in a rapidly changing environment. To achieve this objective, a review of the relevant literature on intellectual capital and strategic partnerships in the construction industry will be conducted, followed by an empirical study of construction companies. This research is part of a set of papers belonging to ongoing research. Since data collection is still ongoing, the nature of this paper is purely exploratory.

The paper is structured as follows. The next section provides a review of the literature on intellectual capital, strategic partnerships, and their relationship with organizational performance and competitiveness. This is followed by a section on the research methodology, which outlines the research design, data collection, and analysis procedures. The results of the study are then presented and discussed in the subsequent section. The final section concludes the paper by summarizing the findings, highlighting their implications for construction companies, and suggesting directions for future research.

2. Literature Review

The construction industry has been facing significant challenges in terms of its performance and competitiveness in recent years. As a result, many construction companies have started to focus on strategies that can enhance their performance and competitiveness. Two such strategies that have gained significant attention in recent years are the development of intellectual capital and the formation of strategic partnerships (Afroz *et al.*, 2019).

Intellectual capital is a crucial factor for companies to achieve and maintain a competitive advantage in the current business environment. The concept of intellectual capital encompasses three main components: structural, relational, and human capital (Matos *et al.*, 2020).

Structural capital refers to the organizational infrastructure, systems, and processes that support knowledge creation, sharing, and utilization. It includes intellectual property, patents, trademarks, copyrights, databases, and proprietary software. Structural capital is essential for companies to capture and retain the knowledge and expertise that is embedded in their processes and systems (Edvinson & Malone 1997). Relational capital, on the other hand, refers to the network of relationships that a company has with its stakeholders, such as customers, suppliers, and partners. These relationships provide access to external knowledge, information, and resources, which can be leveraged to enhance a company's intellectual capital. Relational capital is particularly important in the construction industry, where collaboration and coordination with other stakeholders are critical for project success (Matos, 2013). Human capital refers to the knowledge, skills, and expertise of a company's employees. It includes both explicit knowledge, such as technical and professional skills, and tacit knowledge, such as experience and intuition. Human capital is the most critical component of intellectual capital, as it is the source of innovation and creativity (Edvinson & Malone 1997).

Several studies have highlighted the importance of intellectual capital for construction companies. For example, Liu *et al.* (2022) found that intellectual capital positively affects the performance of construction firms. Similarly, Li *et al.* (2019) found that intellectual capital has a significant positive effect on the competitiveness of construction companies. In addition to intellectual capital, strategic partnerships are also critical for the success of construction companies. Strategic partnerships can provide access to resources and capabilities that a company may not have on its own, such as specialized knowledge, technology, and expertise. Several studies have emphasized the importance of strategic partnerships in the construction industry. For example, Bilgin *et al.* (2015) found that strategic partnerships positively affect the innovation performance of construction companies.

Overall, the literature suggests that intellectual capital and strategic partnerships are crucial factors for the performance and competitiveness of construction companies. The effective management of intellectual capital and strategic partnerships can help construction companies to achieve their objectives and sustain their competitive advantage in the long term (Zhytchenko *et al.*, 2017). However, it is important for construction companies to carefully select their partners and establish clear goals and communication channels to ensure that the partnership is effective and beneficial for all parties involved.

3. Theory and Hypothesis

Intellectual capital is a critical resource for firms in the construction industry because it can enable firms to develop new and innovative solutions to complex problems, improve their operational efficiency, and increase their overall competitiveness. According to the resource-based view of the firm, the availability and effective use of intellectual capital can provide construction firms with a sustainable competitive advantage over their rivals (Li *et al.*, 2019). In this context, the following hypothesis is proposed:

Hypothesis 1: There is a positive relationship between intellectual capital and construction firm performance.

Strategic partnerships can also have a significant impact on the performance and competitiveness of construction companies. By forming alliances with other companies in the industry, construction firms can leverage their complementary strengths and resources to achieve common goals, such as reducing costs, improving quality, and increasing innovation. In addition, strategic partnerships can help companies access new markets and customers and build stronger relationships with suppliers and other stakeholders (Hao & Song, 2016). Based on these findings, the following hypothesis is formulated:

Hypothesis 2: There is a positive relationship between strategic partnerships and construction firm performance.

Finally, it is expected that intellectual capital and strategic partnerships may have a complementary effect on the performance and competitiveness of construction companies. By combining their intellectual resources and forming strategic alliances, construction firms can increase their innovation capability, improve their operational efficiency, and increase their market share (Ferreira & Franco, 2017). Therefore, the following hypothesis is proposed:

Hypothesis 3: The combined effect of intellectual capital and strategic partnerships is positively related to the performance of construction companies.

4. Method

The empirical analysis used in this study is based on the use of primary statistical data collected from several SMEs operating in the construction sector. To build the database, data were collected concerning the characteristics of individuals working in companies in the construction sector and data corresponding to the intellectual capital and strategic partnerships of organizations that develop their economic activity in the same area.

This research is based on a quantitative research where descriptive and correlational approaches correlational approaches allow testing and validating the model. The starting point are the opinions and perceptions of individuals working in the construction sector in management positions. The variables under study allow us to analyze the dynamics of the dynamics of the model. All statistical analysis was performed using IBM SPSS28®.

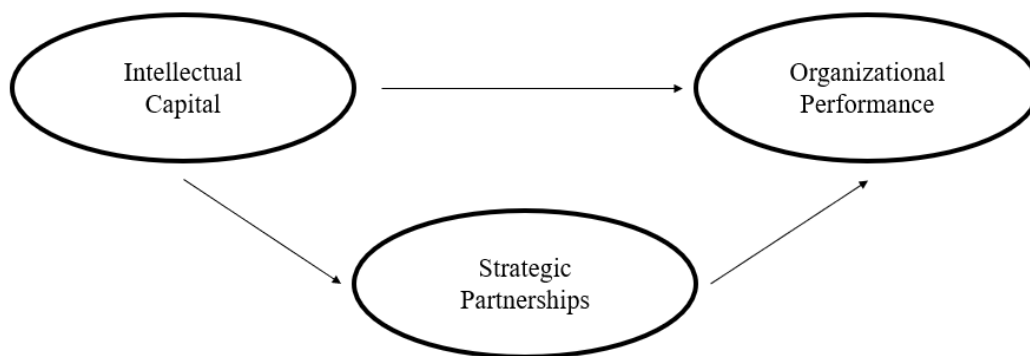


Figure 1: Theoretical Model

5. Sample Characterization

The sample consists of the opinions of eighty-eight (n=88) people with management roles in SMEs in the construction industry. It is characterized by being mostly made up of graduates up to master level, with only (25%) doctorates. Two thirds of the participants work in the human resources areas, in the department or administration of the organization under analysis. As for the period of work, (8%) have worked in the organization for less than a year, (46,6%) have worked in the organization for between one and five years, (23.9%) have worked in the company for between six and ten years, and (21.6%) have worked in the company for more than ten years. Most of the respondents work in organizations with less than 250 employees and with a turnover of less than 10 million euros.

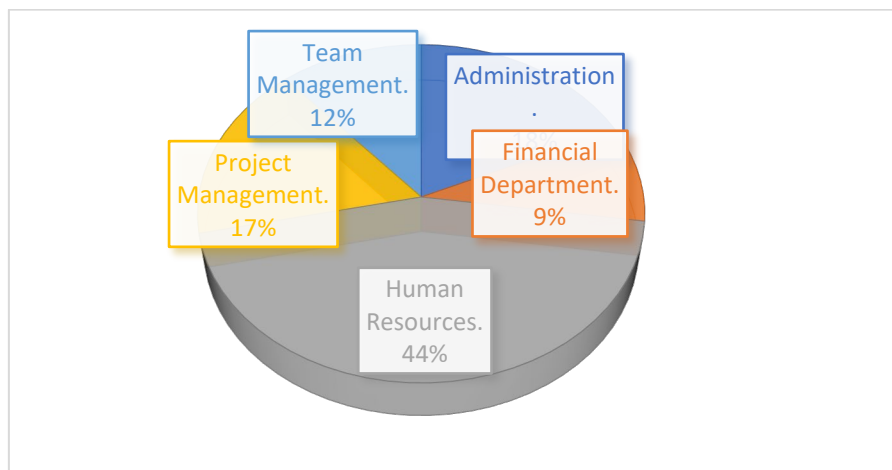


Figure 2: Company Department

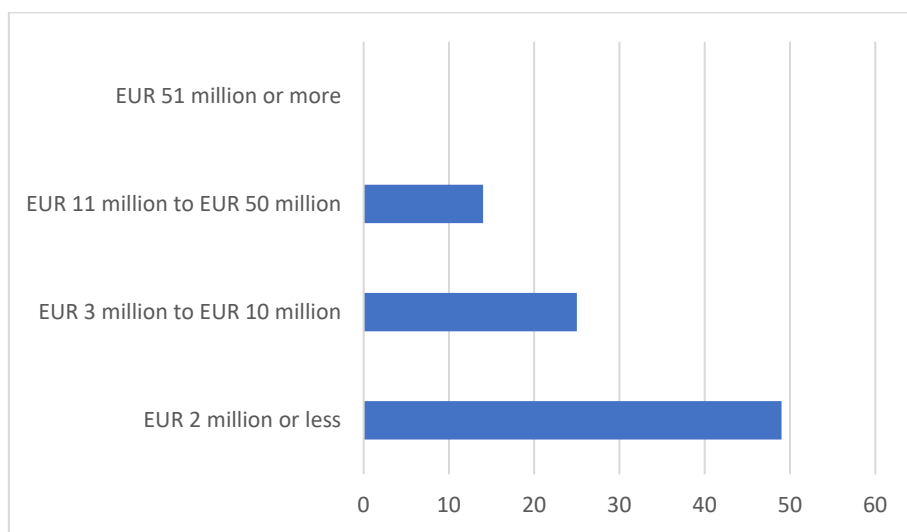
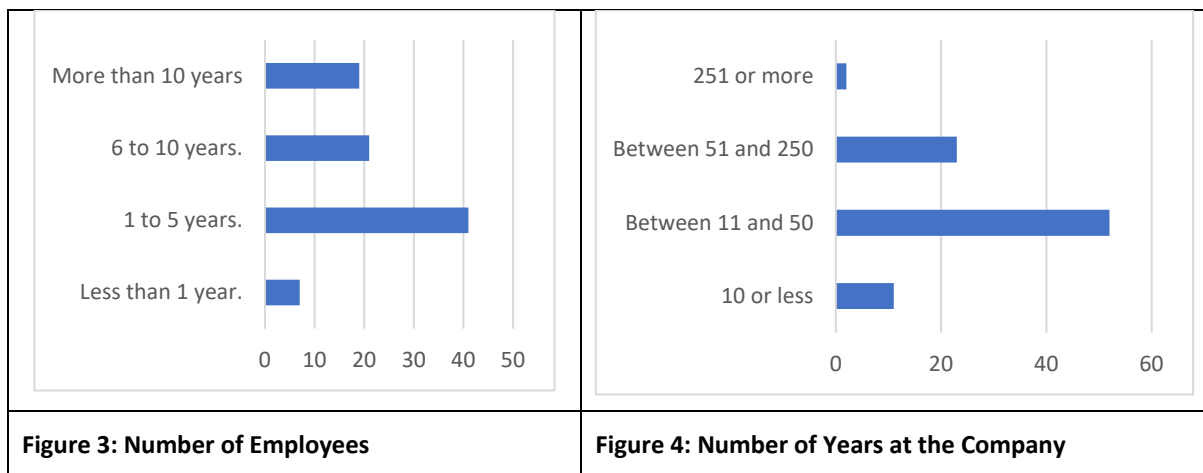


Figure 5: Turnover

6. Measurement Scales

To measure the intellectual capital it was used the scale of Matos et al. (2020), where the relational, structural and human components are evaluated. In the same sense, to measure the construct strategic partnerships the scale of Hoffmann and Schlosser (2001) was used, which is composed of 6 items. Finally, the scale used to measure performance through the ability of organizations to innovate (Elsaman et al., 2022) is composed of 8 items. Responses were given on a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. Using SPSS (version 28) correlation analyses were performed in order to test hypotheses 1, 2 and 3.

7. Data Analysis

In today's complex and competitive business landscape, organizations are constantly looking for ways to improve their performance and gain a competitive advantage. Two key factors that have emerged as crucial drivers of success are intellectual capital in its components relational capital, structural capital and human capital, and strategic partnerships. After collecting data and testing Cronbach's Alpha, we conclude that the questionnaire has a good reliability (0.839). The analysis reveals a positive and highly significant correlation between intellectual capital and strategic partnerships. In this sense, the human capital and relational capital constructs stand out for their positive and highly significant relationship with strategic partnerships. This suggests that construction firms with higher levels of human capital and relational capital are more likely to engage in strategic partnerships, achieving more success with them. Structural capital also appears with a positive and quite significant correlation with strategic partnerships, however, with less weight than the other constructs.

Furthermore, the analysis shows a positive and significant correlation between strategic partnerships and organizational performance, as well as a positive and significant correlation between intellectual capital and

performance. In this scenario, the construct with the highest weight is human capital. This implies that construction firms that establish strategic partnerships and apply intellectual capital management policies tend to achieve better results in terms of organizational performance. Strategic partnerships allow firms to access complementary capabilities, share risks and resources, and leverage synergies, ultimately leading to better performance. The results highlight the importance of intellectual capital and strategic partnerships to the performance of construction firms. By effectively developing and managing intellectual capital, firms can improve their knowledge base, innovation capabilities, and operational efficiencies. Engaging in strategic partnerships allows them to leverage external expertise, expand their market reach, and access new opportunities.

In view of the results obtained, and as referenced above, it is possible to verify that all the hypotheses are true. By validating them it becomes clear the importance of the variables intellectual capital, where the three constructs stand out, and strategic partnerships in the organizational performance in companies in the construction sector. Thus, hypothesis 1, where the focus was the positive relationship between intellectual capital and the performance of organizations in the sector (Liu et al., 2022), hypothesis 2, where the focus is the positive relationship between strategic partnerships and organizational performance (Bilgin et al., 2015) and, finally, hypothesis 3, where the focus is the positive impact caused by the relationship between intellectual capital and strategic partners on the performance of companies in the construction sector (Zhytchenko et al., 2017) are validated.

Table 1: Correlations of Variables

	IC	SC	HC	RC	SP	PERF
IC					,681**	,501**
SC			,508**	,516**	,478**	,300**
HC				,662**	,672**	,509**
RC					,556**	,458**
SP						,630**

**Correlation is significant at the 0,01 level (2-tailed)

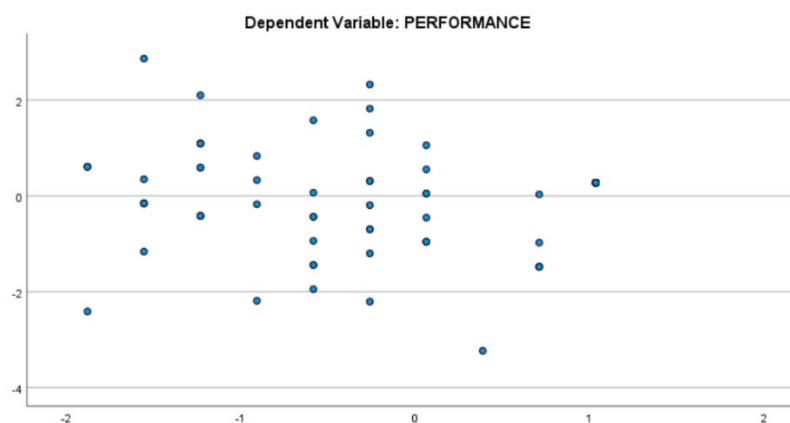


Figure 6: Scatterplot - Dependent Variable - Performance; Independent Variables - Intellectual Capital and Strategic Partnerships

8. Discussion and Conclusion

The validation of all the mentioned hypotheses allows us to broaden the discussion around the interaction between intellectual capital, strategic partnerships, organizational performance and the significant impact that these factors can have on the success and competitiveness of construction companies. The results of various studies and the proposed model highlight the importance of effectively managing intellectual capital and establishing strategic partnerships to improve organizational performance.

First, intellectual capital, which includes human, structural and relational components, is a valuable resource for organizations. Construction companies that invest in developing the knowledge and skills of their employees (human capital), optimizing their internal processes and systems (structural capital), and fostering external

relationships and networks (relational capital) tend to gain a competitive advantage (Matos et al., 2020). The availability and effective use of intellectual capital provide a solid foundation for organizations to establish strategic partnerships (Li et al., 2019).

Thus, and as data collection provides evidence that strategic partnerships positively influence organizational performance, facilitate knowledge exchange, enable cost sharing and risk reduction, and create opportunities for joint value creation (Bilgin et al., 2015). These collaborative efforts have the potential to improve productivity, efficiency, and overall performance outcomes.

Finally, and after corroborating hypotheses posed, it is possible to highlight the crucial role of intellectual capital and strategic partnerships in improving organizational performance in the construction sector. By effectively managing intellectual capital and leveraging strategic partnerships, construction firms can gain a competitive advantage, achieve operational excellence, and drive sustainable growth (Zhytchenko et al., 2017). This knowledge tends to facilitate construction firms in making decisions and developing strategies that maximize the benefits derived from intellectual capital and strategic partnerships.

9. Limitation and Future Lines of Research

The present article, despite its contribution to the literature, contains limitations. A limitation of existing research on intellectual capital, strategic partnerships, and organizational performance is the lack of generalizability to different contexts. Many studies were conducted in specific industries or geographic regions, which may limit the applicability of the findings to other contexts. Future research should aim to explore diverse industries and geographic locations to improve the generalizability of the findings.

Another limitation lies in the measurement and operationalization of intellectual capital and strategic partnerships. These constructs can be complex and multifaceted, which makes it difficult to develop standardized and comprehensive measurement tools. Different studies may use different measurement approaches, making it difficult to compare results across studies. Future research should focus on developing reliable and valid measurement instruments to ensure consistency and comparability. The number of answers to the questionnaire, despite of providing good data, is insufficient to take further conclusions.

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