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EFEITO DA COOPERAÇÃO NA ASSOCIAÇÃO ENTRE ATIVOS INTANGÍVEIS E A VANTAGEM COMPETITIVA

THE EFFECT OF COOPERATION ON THE ASSOCIATION BETWEEN INTANGIBLE ASSETS AND COMPETITIVE ADVANTAGE

[TRADUÇÃO INGLESA]

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CASCAVEL/PR

2022

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Dissertation presented in partial fulfilment of the requirements for the degree of **Master of Science in Administration** in the Department of Administration, Western Paraná State University. Dissertation Supervisor: Dra. Delci Grapegia Dal Vesco

Dissertação apresentada ao Programa de Pós-Graduação em Administração (PPGAdm) – Mestrado Profissional da Universidade Estadual do Oeste do Paraná, como requisito parcial para obtenção do grau de **Mestre em Administração**. Orientador (a): Dra. Delci Grapegia Dal Vesco

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2022

FERNANDO DAMKE

Efeito da cooperação na associação entre ativos intangíveis e a vantagem competitiva

Dissertação apresentada ao Programa de Pós-Graduação em Administração em cumprimento parcial aos requisitos para obtenção do título de Mestre em Administração, área de concentração Competitividade e Sustentabilidade, linha de pesquisa Estratégia e Competitividade, APROVADO(A) pela seguinte banca examinadora:

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Universidade Federal de Santa Maria (UFSM)

Cascavel, 18 de julho de 2022

I dedicate this work to my family, especially to my wife, Silmara, who had patience with days and hours for the construction of this study. I also dedicate to my sons, Matheus and Augusto, who are the reason for my continuous search for knowledge. To my parents, Ivanete and Pedro, who contributed in some way to make this here possible. Finally, to my grandparents, Vera and Oscar, who, even though they are no longer here, would be proud of me for this step in my life.

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"Our lives are finite, but life is infinite. We are the finite players in the infinite game of life. We come and go, we're born and we die, and life still continues with us or without us." Simon Sinek

RESUMO

Este estudo teve como objetivo verificar o efeito da cooperação na associação entre o ativo intangível e a vantagem competitiva em um ambiente de *franchising*. Para que fosse possível atingir o objetivo proposto, foram abordadas as dimensões do ativo intangível, capital humano, estrutural e relacional, adicionando a dimensão capital psicológico. Representadas as dimensões internas, para adicionar robustez à dimensão externa, adicionou-se a rede de cooperação com o intuito de verificar as interações dessas dimensões com a vantagem competitiva. Um estudo de caso único foi realizado com enfoque quantitativo em uma empresa que atua na área de tecnologia da informação. A coleta de dados foi realizada por meio de questionário e os dados foram analisados com aplicação de estatísticas descritivas e modelagem de equações estruturais (*Partial Least Square* - PLS). Os resultados da pesquisa consistiram em um modelo estrutural com poder explanatório da variável dependente desempenho organizacional de 70,6%. Constatou-se, a partir da estatística descritiva, que houve pontos de melhoria necessários para otimização dos processos e, com isso, haveria capacidade de gerar vantagem competitiva. Verifica-se que, com a adição do capital psicológico e das dimensões das redes de cooperação, é possível observar a criação de vantagem competitiva às empresas. Conclui-se, a partir desses resultados, a relevância da empresa realizar a gestão holística do ativo intangível e da rede de cooperação, uma vez que se trata de elementos-chave na geração de vantagem competitiva. Todavia, as limitações de abrangência da pesquisa instigam pesquisas futuras em outras empresas do mesmo setor ou de setores diferentes para fins de ampliar as discussões dos resultados.

Palavras-chave: Ativos intangíveis, vantagem competitiva, ambientes de cooperação, *franchising*

ABSTRACT

This study aimed to verify the effect of cooperation on the association between intangible assets and competitive advantage in a franchising environment. In order to achieve the proposed objective, the dimensions of the intangible asset, human, structural and customer capital were approached, adding the psychological intangible dimension. Having represented the internal dimensions, to add robustness to the external dimension, the cooperation network was added in order to verify the interactions of these dimensions with the competitive advantage. A single case study was carried out with a quantitative approach in a company that operates in the area of information technology. Data collection was performed using a questionnaire and the data were analyzed using descriptive statistics and structural equation modeling (Partial Least Square - PLS). The research results consisted of a structural model with explanatory power of the dependent variable organizational performance of 70.6%. It was found from the descriptive statistics points of improvement needed to optimize processes and thus be able to generate competitive advantage. It appears that with the addition of psychological capital and the dimensions of cooperation networks, it is possible to observe the creation of competitive advantage for companies. Based on these results, it is concluded that the company is relevant to carry out the holistic management of the intangible asset and the cooperation network, since these are key elements in generating competitive advantage. However, the limitations of the scope of the research instigate future research in other companies in the same or different sectors in order to broaden the discussions of the results.

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TABLE OF ACRONYMS AND ABBREVIATIONS

ACI	Intangible coefficient
AVI	intangible value
BSC	Balanced scorecard
SC	Securities commission
EVA	Economic Value Added
FCD	Discounted cash flow
HOC	Higher order construct
IAS	International Accounting Standard
IBRACON	Institute of Independent Auditors of Brazil
ISO	International Organization for Standardization
IVS	International Valuation Standard
MVA	Added value margin
PIB	gross domestic product
IT	Information Technology
TSR	Total shareholder return
VAI	Value of intangible assets
VPGA	International Valuation Standards Council e no Valuation Practice Guidance-Application

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1   INTRODUCTION

In a world where technology is intertwined with all segments, from small retail companies to large industrial conglomerates, intangible assets become a source of competitive advantage, providing the continuity of companies in an environment of uncertainty about the future. Adding intangible assets to the cooperation networks is something that can enhance the companies' results and, therefore, become a competitive differential. Moreover, in a scenario where artificial intelligence and virtual reality are increased, evaluating the psychological capital as a resource that generates intangible assets allows optimizing the performance of teams, for example, through recruitment and selection of qualified human resources appropriate to business needs, and allows anticipating potential conflicts.

One of the main reasons for the increased emphasis on intangible assets is the shift from manufacturing to a knowledge-based economy, where competitiveness relies primarily on intangibles as a differentiation tool for creating competitive advantage (Iriyanto, Suharnomo, Hidayat, & Anas, 2021). The information technology sector is among the sectors that are most influenced by or make the most use of intangibles (Iriyanto, Suharnomo, Hidayat, & Anas, 2021).

The information technology (IT) industry is classified as services, therefore, strategic intangible resources such as intellectual capital, resulting from knowledge, persistence, effectiveness, resilience, optimism, and employee skills, information processes and systems, customer relationships, and cooperation are relevant. It is asserted that IT firms with strong intellectual capital can achieve competitive advantages and differentiate themselves from their competitors (Hoang, Hoang, & Phuong, 2018).

The creation of value to organizations through intangible assets is related to the internal and external perspectives of companies. In order to analyze the value generated by intangibles, it is necessary to use qualitative and quantitative indicators that can be divided into human, structural, customer, and psychological. The first three dimensions are widely discussed in the literature, but the last one, psychological capital, included by Luthans (2002), has been shown to predict competitive advantage within organizations, indicating that in addition to the competencies institutionalized in the company, the type composition, such as "who they are" or

"what they are becoming" are elements that impact the outcome of companies (Tefera & Hunsaker, 2021a).

Furthermore, intangible assets can be generated externally, and cooperation networks are external mechanisms that produce competitive strength, motivated by the search for resources that the company does not yet possess. One way to operationalize this is cooperation through franchising, considering the transmission of commercial know-how, intellectual rights, and the right to operate on behalf of the brand. In other words, from the relationship between the franchisor and the franchisees, it is possible to notice the generation of intangible assets and improvement in competitive advantage, in situations in which the company alone would take relevant time to achieve (Adam, 2006; Alon, Apriliyanti, & Henríquez Parodi, 2021).

The competitive advantage of a company focuses on the way it becomes capable of creating more economic value in a way that can be operationalized through organizational performance, a construct that translates into the efficiency and effectiveness of an action. In view of this, having a structure of intangible assets capable of creating this value, seeking, through cooperation networks, what it cannot do alone in the short term, becomes an operationalization of competitive advantage (Matoso, 2013; Kretschmer, 2021).

Given the above, intangible assets are divided into internal and external factors, being internal the dimensions of human, psychological and structural capital, and external the customer capital, which can be a source of competitive advantage in companies when coupled with the cooperation networks. Considering that, the need for evaluation of intangible assets under the influence of a cooperation environment by franchising is noted, such as analyzing which dimensions of intangible assets generate greater influence for the competitive advantages of companies in the IT sector. Finally, considering that trust between partners and cooperation are relevant intangible assets and that make up the market value of companies, since measuring it is not an easy task, through quantitative and qualitative tools, it is possible to support the strategic decision making (Saaty, 2013, Hoss, 2021).

This study contributes to the extent that it highlights variables with low averages, which may be responsible for the growth or not of the company. It is verified that psychological capital exerts significant strength in the construction of the company's intangible assets; therefore, it must have action plans so that this dimension is evidenced. Another relevant point that was verified is that, for the respondents, the company's great strength is effected by its structure, evidenced by means of higher averages in structural capital.

When combining intangible assets with cooperation networks, one notices evidence that ends up improving the explanatory power about organizational performance. Still on the cooperation networks, one can identify that the joint resolution of problems and the sharing of information are widely used as a source of competitive advantage generation. Finally, it is identified that by combining cooperation networks and intangible assets, here called cooperative intangible assets, there is a more robust leverage on competitive advantage. Based on this finding, it is recommended to verify if the combination of these can be a source of generation and construction of a larger dimension of intangible asset, the social capital.

Since intangible assets, mediated by cooperation, can emerge as drivers of competitive advantage, several possibilities for analysis arise, especially for companies in the information technology sector, the object of this study. In the following topic, the research problem was presented.

1.1 RESEARCH QUESTION

Intangible assets, despite playing a differentiating role in the development of most organizations, are not usually evidenced in financial statements due to the difficulty of their measurement. In conjunction with this, a vast literature is presented that discusses the importance of intangible assets in the composition of the value of organizations (Oliveira, Schossler, Campus, & Luce, 2015; Santos, 2015; de Freitas Rêgo, *et al*., 2018; dos Santos, 2018). The intangible also ends up being responsible for part of the decision-making and, for this, one can use various techniques for more assertive decision-making (Samut, P. Kaya; Erdogan, H., 2019; Juszczuk, 2020; Senvar, Akburak & Necla, 2020).

It is considered that intangibles are divided into internal and external, customer capital (external) can be driven by cooperation networks, and, with the entry of psychological capital, one can analyze beyond what the company institutionalizes of knowledge, taking into account what people are as to persistence, effectiveness, resilience, and optimism. It is necessary to evaluate what the effect of the four generating sources of intangible assets, mediated by franchising cooperation networks on competitive advantage operationalized by organizational performance (Yan, 2012; Shu-Kung, 2014; Basar, 2016; Sunyanan, 2018; Santoso, 2019; Shubhra, 2020).

In the area of technology, there is a great demand for projects, which have deadlines and require specific skills and technologies. Therefore, strategic alliances through cooperation networks can contribute to the growth or even disappearance of the company in the market. One company may have its competencies focused on the financial management of the organizations, others may focus on the relationship with the client, and still others, on the management of production control. In this context, the relationship with third parties can be a source of competitive advantage and a driver in the generation of intangible assets through cooperation networks, operationalized in terms of location, directionality, power, and formalization (Adam, 2006; Alon, Apriliyanti, & Henríquez Parodi, 2021).

Finally, the information technology (IT) sector fits into this scenario since it uses human and structural capital. Psychological capital can be a source of competitive advantage and disadvantage, and customer capital is integrated into a cooperation network, so that it can reflect on organizational performance.

Given this context, the problem this study presents is the following: what is the effect of cooperation on the association between intangible assets and competitive advantage in a franchising environment?

1.2 OBJECTIVES

1.2.1 General

To verify the effect of cooperation on the association between intangible assets and competitive advantage in a franchising environment.

1.2.2 Specific

Based on the above, the specific objectives are defined:

a) to verify the effect of the efficacy, persistence, resilience, and optimism dimensions of psychological capital on organizational performance;

b) to verify the effect of human, structural, customer, and psychological capital on the generation of higher order intangible assets;

c) to verify the effect of the dimensions competitive power, joint problem solving, information sharing, and cost and risk sharing of cooperation networks on organizational performance;

d) to verify the effect of intangible assets mediated by a cooperation environment in franchising on competitive advantage.

1.3   JUSTIFICATION AND CONTRIBUTION OF THE TECHNICAL PRODUCTION

According to the study conducted by the Brazilian Association of Software Companies (ABES), the technology industry in Brazil grew 22.90% and invested about R$200.3 billion regarding the software, services, hardware markets, and the segment's exports. This survey indicates that Brazil gained positions in the world IT ranking, from 10th position, in 2019, to 9th, in 2020, and maintained its leadership in the Latin American market, with a 44% share of this market (ABES, 2021).

Taking the regional context into account, the southern region of Brazil corresponds to 13.5% of the national market with a growth of 1.5% in market share, occupying second place behind the southeast region. As for the market, according to data from this research, there are 192.7 billion connections in end users and 37.6 billion in corporate users. Finally, as trends, the study addresses that there is a need for investments in increased productivity, cost reduction, and improved customer acquisition and retention. Therefore, intangible assets, in their dimensions, are responsible for a large part of this evolution since the IT market relies heavily on labor (ABES, 2021).

This study is justified due to the relevance of firstly verifying the effect of psychological capital as a source of generation of intangible assets, and subsequently, verify, in a cooperative franchising environment, the effect of intangible assets in the competitive advantage operationalized by organizational performance in an Information Technology (IT) environment, a sector that, according to ABES, projects a 14.3% growth in investments in 2022, despite inflation and the election year. In addition, Brazil should account for 1.65% of all global investments in technology, maintaining its 40% share (US$115 billion) contributed for information technology (ABES, 2022).

Psychological capital is an intangible asset that impacts the effectiveness of an organization, even more so in companies where institutionalized knowledge and people's

psychological conditions are responsible for helping or hindering company performance. It is the strength of a human being's positive psychological resource, which can be formed from persistence, effectiveness, resilience, and optimism; this asset is often confused with human capital. However, didactically, Luthans (2002) presents that they are distinct "while psychological capital is more about what you are, human capital is about what you know."

In a context where the pandemic of COVID-19, with potential effects in the first two years of duration and dissemination of remote work, ends up becoming a critical factor within companies, and it is practically not explored in the national literature. Given this, the need to understand psychological capital as a differentiating factor in the formation of intangible assets is further verified.

Therefore, a research gap was verified within the field of intangible assets, in which it was possible to identify in the international literature the use of a dimension little used in the national territory, the psychological capital. The contemporary tripartite classification (human capital, customer capital, and structural capital) of intangible assets has been predominantly promoted (Bontis *et al*., 2000; Bozbura, 2004; Chen *et al*., 2006; Hsu and Sabherwal, 2012; Inkinen, 2015; Jardon and Martos, 2012; Kamukama *et al*., 2011; Leitner, 2011; Reed *et al*., 2006; Subramaniam and Youndt, 2005; Wang and Chen, 2013; Wu *et al.*, 2007; Youndt *et al*., 2004; Youndt and Snell, 2004). However, the results of these researches may suffer adverse effects of psychological capital (Luthans, 2002 ; Luthans and Youssef-Morgan, 2004) as an asset that plays a significant role in the effectiveness of an organization (Tefera & Hunsaker, 2021a), especially, in times of pandemic, work isolation, and remote work.

Considered a promising market and existing a gap within the dimensions of intangible assets, this study is justified by the relevance of the market to which it will be applied, empirical and analytical justification of this dimension within intangible assets; consequently, there is the effect of these assets, mediated by a cooperation environment in franchising, on the competitive advantage of companies in this sector.

Once the study is justified, the following section presents the structure of this report.

1.4   STRUCTURE OF THE REPORT

This study is divided into eight chapters. In Chapter 1, there is the introduction, whose objective is to contextualize the reader about the content of what will be addressed; then, there

is the research problem, general and specific objectives, being finalized by the justification and contribution of the technical production. Chapter 2 presents the theoretical and practical references about the studied theme, being subdivided into three sections: (2.1) Intangible Assets, (2.2) Cooperation networks and franchising; (2.3) Competitive advantage, and (2.4) Intangible assets measurement models.

Chapter 3 demonstrates how the methodological path employed in the study happened. In Chapter 4, the type of intervention that was carried out is presented, which, in this case, was an intangible asset valuation model with first, second, and third order variables of intangible assets on competitive advantage, operationalized by organizational performance, mediated by a franchising cooperation environment in companies in the information technology sector.

Chapter 5 presents the activities developed to verify the effect of psychological capital on intangible assets and the effect of intangible assets, moderated by the cooperation environment, on the competitive advantage of companies in this industry. Chapter 6 demonstrates the interpretation and analysis of the results.

Chapter 7 presents the realization of the intervention, with the main results obtained, the contribution, opportunities for improvement, and suggestions for new applications. Finally, in Chapter 8, final considerations were presented, such as the conclusion, limitations of the research, and suggestions for theoretical and practical contributions.

2   THEORETICAL AND PRACTICAL REFERENCES

Intangible assets have a strong influence on the market value of companies and are also able to dictate the course of these. Furthermore, the disclosure of these assets can cause improvements to the organizational performance of companies and thus contribute to value creation (Baruah, 2020).

An asset can be identified as intangible when it is proven that it provides or will provide future economic benefits; furthermore, it can be divided into internal and external. This study promotes the insertion of psychological capital, which, together with human and structural capital, may be responsible for generating competitive advantage within companies. In contrast to this, cooperation networks, represented here by franchising, are presented as a source of competitive advantage in conjunction with customer capital (Cheikh & Noubbigh, 2019; Tefera & Hunsaker, 2021b).

The present study seeks to verify whether, with the insertion of psychological capital, the dimensions of intangible assets and cooperation through franchising can be a source of competitive advantage, operationalized by the evaluation of organizational performance.

This chapter, intended for the referential of the theoretical basis that underlies the work, presents the concepts of intangible assets, the scenario where the study will be applied, the theory of cooperation in franchising, and, finally, the verification of the effect of intangible assets and cooperation networks, through the higher-order constructs (HOC) and their influence on competitive advantage.

2.1   INTANGIBLE ASSETS

Intangible assets are assets without physical substance employed in the generation of productive benefits (Hitchner, 2006; Hendriksen; Van Breda, 2011). In order to be considered assets, they also require that they be identified in probable benefits and if the cost or value can be reliably measured (Flower, 2002).

According to Hendriksen and Van Breda (2011), intangible assets can be identifiable and non-identifiable. The assets become identifiable as they are associated with an objective description. As for the non-identifiable ones, as the denomination states, it is not possible to clearly define their origin.

Also, internally developed intangibles need to pass a recognition test before they can be recorded in the company's financial statements, in this case, a business combination in which the acquirer identifies the advantage, measures, and recognizes it as payment consideration, validating the estimate of such intangibles (Sallaberry, 2014).

Regarding other research, Cheikh & Noubbigh (2019) address the effect of intellectual capital drivers on performance and value creation. Du, Li & Singal (2019) address the valuation of intangibles in hotel chains; Gardini, Pastrana, Tostes & Moota (2019) measure intellectual capital using techniques tied to information and communication technology.

Yet, there is another research front that brings an innovation-oriented view into intangible asset management. Ramos, Molina, & Peláez (2019) address an innovative perspective for organizations through a reputation intelligence management model, while Molina, Ramos, Gracia, & Sánchez (2020) address innovation in brand management through social media data. Finally, we observe the inclusion of Social Capital as a dimension of Intellectual Capital, addressed by Gonzáles, Miotto, Martín & Sánches (2020) in the relationship between equalities policies and moral legitimacy, according to the perceptions of those authors.

Given the above, one can notice the amplitude of publications about intangible assets, which end up manifesting themselves in a large part of corporate processes and as a source of competitive advantage. For a better understanding of the theme, the next step is to address the concept of brand, loyalty, and reputation.

2.1.1 Dimensions of the intangible asset

Intangible assets have the potential to become the new source of wealth in organizations, as they have a direct and positive effect on the organizations' business performance. Therefore, it is suggested that companies that invest in intellectual capital think about the future since this outlay can influence the success of the company (Sharabati, Nour, Durra, & Moghrabi, 2013). At a minimum, there are three elements highlighted in the literature regarding intellectual capital: its intangibility, the fact that it creates value, and the growth effect of collective practice (Cabrita & Bontis, 2008).

Besides the elements, the intangible asset is defined in three dimensions: human capital, structural capital, and customer capital (Stewart, 1997; Bontis, 1998; Cabrita, 2012).

Such dimensions should have interrelationships, so that they increase the knowledge base of organizations. However, when it comes to sectors where there is relevant use of human material, a new component can be considered as a source of intangible assets, the psychological capital, responsible for the collective motivation in an organization for better performance. It refers to the persistence of goal-oriented energies and paths, employees' positive expectations of their efforts, and their ability to overcome adversity to ensure better performance (Tefera & Hunsaker, 2021b).

In order to verify the context of the intangible asset dimensions and thus include the psychological capital dimension and add it to Bontis' (1998) base, the dimensions of structural capital, human capital, and customer capital are delimited, according to Figure 1.
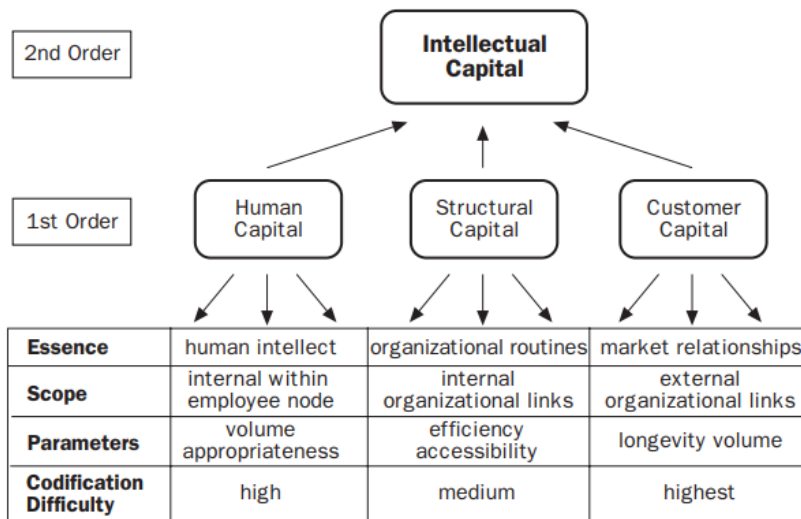
Figure 1 – Conceptualization of the intangible asset dimensions
Source: Bontis (1998).

In this study, the HOC was used as the theoretical model, proposed by Tefera & Hunsaker in 2021. Thus, the next subsections address: human capital, structural capital, customer capital, and psychological capital. Furthermore, it also addresses how the measurement of the effect of intangible assets through a HOC with third-order variables is carried out.

2.1.2   Human Capital

Human capital is the combination of knowledge, tools and skills that each employee of the company has for the execution of tasks. From the organization's perspective, human

capital is the basis for innovation and strategic renewal of companies (Stewart, 1997; Bontis, 1998; Bontis, 1999).

Although existing research has proven that intellectual capital has a positive impact on a company's financial performance, the intensity of the relationship between them depends on the type of industry and the type of organization. Some previous research has shown that the company's brand and reputation have a greater influence (Hall, 1992), while Wang and Chang (2005), Steenkamp & Kashyap (2010), and Vlastelica *et al*. (2018) have proven that customer relationships have a great influence on a company's business results. However, human capital has been shown to indirectly influence a company's performance. Know-how is one of the most relevant human capital elements throughout business history (Radonić, Milosavljević, & Knežević, 2021).

The process and forms of investment in human capital are influenced by the very definition of this asset. They are intended not only to increase and enhance the knowledge and skills of the firms' employees but also to extend the period during which those skills and knowledge are used in the firm. Also, they can focus on the aspects that support them during the utilization of the knowledge and skills themselves (Miciak, 2019).

According to Vodák & Kucharčíková (2011), the three basic forms of investment activities related to human capital are represented by the following:

a) the investment in the healthcare of the employees;

b) the investment in the working conditions (pertaining to ergonomics of working stations and tools); and

c) the investment in the skills, abilities, knowledge and attitudes of employees.

Gubiani (2011) presents the measures considered in the evaluation of human capital in the view of authors, as shown in Figure 2.

WHAT IS EVALUATED	AUTHORS

The company's human knowledge:
    Skills and Knowledge
    People and Group Capability
    Talent and Know-How
    Attitude - conduct - motivation - values - skills
    Practices - people's ethics
    Intellectual agility, skills and experience of
    employees and directors
    Creative capacity and innovation
    Satisfaction and loyalty
	Llauger (2001); Nonaka and Takeuchi (1997); Rodrigues *et al.* (2009); González and Sallero; (2010); Bontis and Fitz-enz (2002); Edmonson (1999); Edvinsson and Malone (1998), IADE (2003); Kaplan and Norton (1997); Bontis (2001); Stewart (1998); Sveiby (1998); Roos and Roos (1997); Curado (2006); Mouritsen *et al.* (2001); Osterloh and Frey (2000); Ravichandran (2000); Subramaniam and Youndt (2005); Youndt *et al.* (2004); Bontis *et al.* (2000).

Figure 2 – Measures for human capital evaluation
Source: Gubiani (2011).

Given the above, it is necessary to understand whether the human intangible asset relationship is direct or moderated by other dimensions in producing competitive advantage, such as the previously mentioned customer capital (Tefera & Hunsaker, 2021b).

2.1.3   Customer Capital

Customer capital means the value added in the company's relationship with the external environment agents formed by shareholders, suppliers, creditors, customers, and others. Just as the organization invests in its staff in order to increase the value of capital, it is necessary to make investments in customers, forming a common intangible between the parties and adding value throughout the production chain (Lugoboni *et al.*, 2021).

According to Sveiby (1998), customer capital is the time spent maintaining, establishing, and developing relationships with customers. On the other hand, Stewart (1998) argues that customer capital is very similar to human capital once it is not possible to "own" the customers or people, but it is possible to invest in the intellectual capital of joint ownership between customers and the company.

Gubiani (2011) presents the measures considered in assessing customer capital in the view of authors, as shown in Figure 3.

WHAT IS EVALUATED	AUTHORS
Clients - Suppliers - Shareholders **Partners - Alliances - Agreements** **External Agents - Society - Government - Industry** **Stakeholders and other interest groups**	Kaplan and Norton (2004, 1997); Bontis (1998, 1999); Edvinsson and Malone (1998); IIADE (2003); Stewart (1998); Sveiby (1998); Sveiby and Simons (2002); Youndt *et al.* (2004); Llauger (2001); Neely (2000); Davila *et al.* (2007).

Figure 3 – Measures for customer capital evaluation
Source: Gubiani (2011).

Once the customer capital has been defined, it is necessary to include, in the evaluation, the structural capital dimension to verify its capacity to produce competitiveness for the companies.

2.1.4 Structural Capital

Structural capital is a valuable strategic asset, composed of non-human structures, i.e. information systems, routines, databases, and procedures. It provides tools and the architecture to retain, record, and make knowledge flow along the value chain (Cabrita & Bontis, 2008).

Edvinsson (1997) proposed a division for structural capital, as shown in Figure 4.

Organizational capital	Innovation Capital	Process Capital
São os sistemas, instrumentos e filosofia operacional que permitem o fluxo de conhecimento na organização e áreas externas, como canais de suprimentos.	São os resultados da inovação sob a forma de direitos comerciais amparados por lei (patentes), propriedade intelectual e competências relacionadas a colocação de novos produtos e serviços no mercado.	São os processos, técnicas, rotinas, procedimentos e programas direcionados aos empregados, que aumentam a eficiência.

Figure 4 – Division of structural capital
Source: Edvinsson (1997).

Structural capital is the backbone of the company itself, which involves its organizational capacity, including its administrative planning and control systems, processes, functional networks, policies, and even its culture, i.e., all the aspects that help a company generate value. Some claim that structural capital is the transformation of knowledge, sharing, creativity, and experience. Hence, it must be structured with the help of information technology and telecommunications, databases and process description in order to retain human knowledge in the company.

Gubiani (2011) presents the measures considered in the evaluation of structural capital in the view of authors, as shown in Figure 5.

WHAT IT EVALUATES	AUTHORS
Skills - Experience - Knowledge of the company; Institutionalized and codified information (databases, patents, manuals, routines, flowcharts, intellectual property); Protocols and procedures of the organization; Business culture and values; Environment - structure of the company, both physical and technological; Strategies for the creation of innovation-oriented knowledge.	Bontis (1999); Edvinsson and Malone (1998); Iade (2003); Stewart (1998); Llauger (2001); Roos and Roos (1997); Youndt *et al.* (2004); Rodrigues *et al.* (2009); Curado (2006); Subramanian and Nilakanta (1996); Wan *et al.* (2005); Davila *et al.* (2007).

Figure 5 – Measures for structural capital evaluation
Source: Gubiani (2011).

Structural capital can be subdivided into organizational capital (includes the aspects related to the structuring of the firm and its decision-making process) and technological capital (includes technical and industrial knowledge) (Pablos, 2004; Coser, 2012).

2.1.5   Psychological Capital

Psychological capital is an intangible asset that impacts the effectiveness of an organization. It is the strength of a human being's positive psychological resource, which can be formed from persistence, effectiveness, resilience, and optimism. Collectively, these positive psychological resources in the organization are essential to its success. Although some people confuse the distinction of psychological capital and human capital, Luthans *et al*. (2006) clearly indicated the difference, stating that while psychological capital is more of what one is, human capital is about what one knows (Tefera & Hunsaker, 2021a).

Authors, such as Bontis, Mention, Sharabati, Jawad, Cabrita, and Peinado classify intellectual capital into three dimensions, namely human, structural, and customer capital. However, these authors miss the newly-introduced psychological capital as an asset that plays a significant role in an organization's effectiveness. Omitting this or other dimensions does not result in a complete understanding of the concept of intangible assets (Tefera & Hunsaker, 2021b).

In contemporary business systems, psychological capital is considered to be the main source of entrepreneurial potential to drive the unique performance of organizations. Moreover, recent research has highlighted the importance of psychological capital for business success,

contributing positively to the creative and innovative performance of organizations. In a pandemic scenario of COVID-19, this intangible asset has been shown to play a critical and constructive role under conditions of uncertainty, in which great part of the global population needed to lock themselves at home, performing all their activities remotely. This constituted considerable relevance to IT as a subsidy for continuity (Baluku *et al.*, 2016, 2018; Gao *et al.*, 2020; Liguori and Pittz, 2020; Kim *et al.*, 2018; Krueger, 2020).

Agarwal & Farndale in 2017 postulate that psychological capital can be of great value in understanding the relationship between high performance teams and intellectual capital. For example, high-performance teams are associated with providing employee autonomy, which can raise intellectual capital due to the associated feeling of increased competence. Intellectual capital also requires a safety net provided by a sense of psychological security since, in an environment of low psychological security, there can be negative personal outcomes. Finally, psychological conditions can therefore influence performance, while social and environmental factors facilitate or impede self-motivation to realize and implement creative ideas (Ryan and Deci, 2000).

The constant increase in competitiveness among companies has raised the strategic importance of intangible assets as a differentiation factor, which provides a series of competitive advantages as a way to face the competition and stand out in their markets of operation since tangible assets, such as factories or equipment, for example, are not responsible for most of a company's value generation, since, in a competitive environment, they could be quickly reproduced or become obsolete.

Given the context, the following research hypotheses are formulated:

H1a: Effectiveness is positively associated with psychological capital.

H1b: Persistence is positively associated with psychological capital.

H1c: Resilience is positively associated with psychological capital.

H1d: Optimism is positively associated with psychological capital.

2.1.6   Definition of intangible asset hypotheses

Bontis (1998), Cabrita and Bontis (2008), Sharabati, Jawad, and Bontis (2010), Jaward and Bontis (2010), Mention and Bontis (2013), Peinado (2016), Tefera and Hunsaker (2021a), and Tefera and Hunsaker (2021b) addressed, in their research, the positive impact of intangible assets on firm performance through the dimensions of human, structural, customer, and psychological capital. Given the above, after presenting the dimensions that make up intangible assets, the following research hypotheses are formulated:

H2a: Human capital is positively associated with the intangible asset.

H2b: Structural capital is positively associated with the intangible asset.

H2c: Customer capital is positively associated with the intangible asset.

H2d: Psychological capital is positively associated with the intangible asset.

Given the relevance of the topic and having already presented each dimension of intangible assets, it is necessary to evaluate how this measurement can be made and what legislation supports it so that there is assurance and reliability that intangible assets are classified and measured fairly and within the current legislation, with clear and replicable criteria (Rojo, Souza, and Trento, 2012).

2.1.7   Laws and regulations

Once intangible assets and their dimensions have been presented and conceptualized, it is necessary to address the normative aspects of this relevant part of corporate value. Law 11,638, of December 28, 2007, foresees a series of modifications and innovations to Law 6,404/76 regarding the preparation and disclosure of financial statements. One of the advances of this law was to change the rules applicable to the treatment of intangible assets on the balance sheet of companies, initially provided for in the Corporations Law and regulated by Deliberation No. 488, of December 3, 2005, which was issued by the Securities and Exchange Commission of Brazil (CVM) which, in turn, also approved the NPC (Accounting Standards and Procedures) Pronouncement No. 27, issued by the Institute of Independent Auditors of Brazil (IBRACON) (Antunes, Silva & Saiki, 2009).

Another regulation that rules intangible assets is CPC 04, from the Brazilian Accounting Pronouncements Committee (CPC). It defines the criteria for its identification, so that the asset must be separable, i.e., it can be separated from the entity and sold, transferred or licensed, leased or exchanged, individually or together with a related contract, asset or liability, regardless of the intention of use by the entity. Alternatively, it must arise from contractual or other legal rights, regardless of whether such rights are transferable or separable from the entity or from other rights and obligations. Finally, the intangible should only be recognized when the generation of future economic benefits is probable and the cost can be measured reliably.

Internationally, intangible assets are addressed within the International Accounting Standard (IAS) 38, the International Valuation Standard (IVS) 210, International Valuation Standards Council, and Valuation Practice Guidance-Application (VPGA) 6 of Valuation-Global Defaults 2020. Also, in 2010, the International Organization for Standardization (ISO) published ISO 10668 on brand valuation. This is the first brand valuation standard to operate worldwide and is a step toward harmonizing brand valuation criteria. A novelty present in ISO indicates that any evaluation should include, in addition to financial aspects, information about customer behavior and legal aspects (Alcaide, Guadalajara, & De La Poza, 2021).

Furthermore, to be identified as an intangible asset, it must present the most usual classifications for this type of asset in an objective and synthetic manner. Goodwill can be defined as the difference between the market value of assets and liabilities and the market value of the company (Iudícibus, 2009). Copyrights and rights on natural resources are classified as intangible assets, as are software, licenses, and franchises. Finally, brands are also classified as intangibles, such as a phrase or symbol that distinguishes or identifies a particular entity or product (Schmidt & Santos, 2009).

Once presented what the dimensions of intangible assets are and how they take effect, as well as the legislation that supports their measurement, customer capital, as an external dimension of intangible assets, is responsible for the generation of future economic benefits, in relations of partnerships and alliances with clients and suppliers. Thus, one way to boost these relationships happens by building cooperation networks, in which it will be possible to seek, from third parties, what the company is currently unable to supply. This means that a possible way to build these cooperation networks is through franchising, presented in the following section.

2.2   COOPERATION NETWORKS AND FRANCHISING

As aforementioned, licenses, software, duly registered processes, which are capable of generating future cash flow, are considered intangible assets by the organizations. Most of the franchising system comes from the premise of knowledge transmission from the franchisor to the franchisee; therefore, it is necessary to present the concept, the history, and the norms for companies that work under the franchising system.

2.2.1   Cooperation networks

The acceleration of new forms of organizational arrangements occurred strongly as of the 1970s, with the beginning of the change in consumption patterns. The need to create more customized products began to demand from companies a high capacity for flexibility and adaptation to new consumption models. In this scenario of fierce competition, strategic alliances arise as an alternative for maintaining the competitive capacity of organizations (Adam, 2006).

Networking is justified for a variety of reasons, reflecting differences in the strategic objectives, market positions, and current and future actions of competing firms. One of the motivations for network cooperation lies in the search for resources that the company does not yet possess, but that can be found in network partners. Therefore, to be able to compete, companies started to form networks in several countries, both developed and developing (Adam, 2006; Tatsch, 2010).

The term "cooperation network" designates a group of individuals or organizations of the same productive, retail or service segment, with the same or similar size. These organizations are interconnected by means of a registered and formal legal entity, aiming at common objectives and actions that provide an efficiency gain. What motivates these networks is the possibility of performing joint actions and obtain profit (Fragoso, 2015).

There are at least four indicators of networks and at least eight typologies for creating cooperative networks. Petter (2012) proposes the division into networks in terms of location, directionality, power, and formalization, as presented in Figure 6.

Index	Typology	Characteristics
Networks in terms of Location	Scattered Networks	These are those that use an evolved logistics process, as a means of overcoming distances in order to achieve the relationship between the parties, i.e., they are not characterized by geographical proximity.
	Clustered Networks	They are formatted by means of the geographical proximity of their players and have as a fundamental characteristic the maintenance of analogies that, in many cases, are understood beyond the purely commercial interest. This network mold includes not only its players but also technical-organizational support institutions, such as technology centers, universities, and governmental institutions. As for its formalization, this typology can be a formal structure, supported by a contract, or informal, without a contractual basis.
Networks in terms of Directionality	Vertical or Top-down Networks	Generally, this typology is found in situations where cooperation interrelations occur between a given company and the elements of the different links of a productive chain. In this situation, companies cooperate jointly with their commercial consorts, such as suppliers, producers, service providers, and distributors, aiming to ensure the survival of the actors involved.
	Horizontal cooperation networks	It is a cooperative relationship that occurs between companies in the same segment, i.e. they offer and produce similar products, and this cooperation takes place between a given company and its direct competitors. For this reason, the process of cooperation in horizontal networks requires special attention because it opens up great possibilities for great possibilities for generating conflicts. This typology is usually implemented when, in most cases, companies alone face considerable difficulties in acquiring and sharing resources that are lacking in production, meeting the needs of both the internal and external markets where they operate, and launching and maintaining new products. Still, in relation to conflicts, these can be managed through agreements able to block conflicts directly related to goods and products in this typology.
Networks in terms of Power	Orbital Networks	They are characterized by a hierarchization of power, similar to a company-supplier network formation.
	Non-Orbital Networks	This is a network typology in which all its actors participate equally at the level of a global decision.
Networks in terms of Formalization	Formal Networks	It is supported by a contractual dimension. This network mold is formalized through contracts and/or contractual terms that stipulate the rules of procedure among its actors.
	Informal Networks	Based on inter-firm coexistence. This typology allows informal incidences between economic actors (organizations, companies, professionals, universities, institutions, associations, etc.) with common concerns and objectives.

Figure 6 – Characteristics of company networks
Source: Petter (2012).

Franchises are a grouping formed by a central company and a group of companies that act as economic agents, called franchisees, to which the central company transfers the rights to

use a brand and the processes inherent to this brand. The motivational factor for the members of this form of grouping are the bilateral gains resulting from the brand, besides the economy of scale obtained through joint activities, such as advertising, administration, product development, and distribution (Tálamo, 2008).

2.2.2   Dimensions of cooperation networks

Companies, especially small ones, find it difficult to compete when acting alone due to the increasing complexity of tasks within the business environment. Thus, they seek partnerships so that they can work in an associative way. The cooperation networks allow the integration of external intangible assets, the customer capital, so that they can supply demands that, alone, the company could not meet. Among the elements present in cooperation networks, one can mention the power of competitiveness, the joint resolution of problems, the sharing of information, and the sharing of costs and risks (Rambo, Filho, Vey, Uhlmann and Freitas, 2006).

There is no consensus in the literature regarding the dimensions used to analyze cooperation; however, the widely spread and converging propositions are those of Heider and Miner (1992), corroborated by Mahama (2006), for determining cooperative behaviors. The dimensions are joint problem solving, use of power, willingness to adapt to change, and information sharing (Bescorovaine, 2016).

Power interactions require participants to exercise control over their available resources and their competence in order to gain power over other participants who depend on these resources. Such interactions have positive effects in cooperative relationships, as long as their power boundaries to be exercised have been established, since these relationships have high interdependence and other stakeholders depend on this proper resource management (Bescorovaine, 2016).

With these boundaries defined, another benefit of cooperative networks is the sharing of costs and risks. In addition, resources, facilities, and casually competencies can be shared in order to extend the geographic reach or apparent size that a competitor can offer to a customer, sharing the risks and infrastructure costs of bidding for competition. In other words, they exert influence on each other and use their strategic resources in order to have greater competitive power (Olave and Neto, 2001).

One of the reasons for establishing cooperation networks is the achievement of a common goal; the joint sharing of problems allows the mutual fulfillment of activities in order to meet the collective and individual needs of participants. Mahama (2006) argues that joint problem solving is crucial for cooperative relationships and increases management efficiency. In other words, it does not imply submission of the parties to the detriment of the needs of the peers, but rather a harmonious work performed together for the mutual fulfillment of needs.

Information sharing refers to the extent to which information is transmitted to peers in an interorganizational relationship, the result of a coordinated effort, developed by the parties involved in order to create efficient conflict resolution mechanisms. The degree of sharing can vary according to the type of relationship, and the dimension deals with the willingness of the participants to provide the necessary information exchange (Bescorovaine, 2016).

The intangible assets, especially the dimension of customer capital, can be boosted by the cooperation networks since, with the sharing of information between companies, it is possible to generate gains in relation to the teams through human and psychological capital, and also allows the company to achieve goals that it would not be able to by itself. Finally, in a competitive and frequently changing scenario, sharing costs and risks and having someone to jointly solve problems can be seen as a source of competitive advantage and thus optimize organizational performance.

Given the context, the following research hypotheses are formulated:

H3a: The power and competitiveness dimension is positively associated with cooperation networks.

H3b: The joint problem-solving dimension is positively associated with cooperation networks.

H3c: The information sharing dimension is positively associated with cooperation networks.

H3d: The costs and risks dimension is positively associated with cooperation networks.

One way to operationalize a cooperation network in an institutionalized, validated way and with defined rules is franchising, which is discussed in the next section.

2.2.3   Market and franchising

The term "franchise" appeared at the time of the Middle Ages, in France, with the expression *franc*, which is a word from Old French, meaning a transfer of a right, granting of a privilege or exclusive permission. However, the franchise system has its origin in the mid-19th century in the United States; in the year 1862, the Singer & Co. company, dedicated to the manufacturing of cooking machines, started using this formula (Noro, Rodrigues, Bittencourt & Lengler, 2012).

Franchising is a business model in which the franchisor extends to the franchisee commercial know-how, intellectual rights, and the right to operate under a brand name. The globalization of franchising took off in the 1990s as a result of push factors (in the form of fees and royalties) and pull factors (saturation of the domestic market and a highly competitive domestic market). The spread of franchising around the world occurred through imitation and internationalization of US franchisors. During the 1960s to 1980s, large companies, such as Hilton and McDonald's, dominated international franchising; however, in the 1990s, the structure of the industry changed, with many small and medium-sized enterprises (SMEs) using franchise models domestically and internationally (Alon, Apriliyanti, & Henríquez Parodi, 2021).

The largest international franchise brands are leading multinationals with a significant global presence. Examples include the hospitality, restaurant, and retail sectors (Marriot, Hilton, McDonald's, KFC) and general service sectors (car rentals, cleaning, and fuel distribution). This model allows the standardization and replication of proven concepts in service companies, providing the benefits of economies of scale through globalization. Thus, franchising is an alternative model for business promotion, and is intended for any and all people who are interested in using it as a consecration of the entrepreneurial spirit (Bretas & Alon, 2020).

In Brazil, the law that regulated the business franchise was Law No. 8,955, of December 15, 1994, which, in its Article 2, provides that the franchisor grants the franchisee the right to use a trademark or patent. This is associated with the right to distribute products and services, to use technology of deployment and management of the business or operating system, developed or owned by the franchisor, through direct or indirect remuneration, without,

however, being characterized employment relationship (Noro, Rodrigues, Bittencourt & Lengler, 2012).

In order to understand the roles and terms, it is necessary to define franchisor, franchisee, and royalties. Franchisor indicates the one who grants or concedes the right to use the brand to another; the franchisee is a partner who receives the license or concession of the right to use the brand. Royalty is considered a financial retribution paid monthly by the franchisee to the franchisor for the continuous use of the brand, for the permanent support that the franchisee receives, for the training and recycling, for the marketing support, and for the administrative support, provided by the franchise agreement (Noro, Rodrigues, Bittencourt & Lengler, 2012).

Emerging markets comprise the largest and most dynamic markets for franchisors, considering their population, *per capita* income, urbanization rates, and income distribution. For all these indicators, Brazil is one of the most attractive markets for franchisors, so the numbers for the franchise sector are impressive. Franchise revenue in Brazil experienced intense growth from 2015 to 2019, up 34%, according to the Brazilian Association of Franchising (ABF). In 2019, the industry's revenue was US$46 billion, with 2,918 franchisors operating 160,958 establishments in the country. Brazilian franchisors are responsible for 1.36 million direct jobs in the country (ABF, 2020).

O sistema de franquia apresenta, além de vantagens e desvantagens, algumas limitações para ambos os parceiros, as quais devem ser administradas sem comprometer o desempenho de toda a rede, sempre buscando o sucesso do empreendimento; o elo formado deve ser satisfatoriamente forte para transcender os obstáculos encontrados. Pode-se verificar, com base na Figura 7, as principais vantagens e desvantagens do sistema de *franchising*.

Advantages of Franchising	Disadvantages of Franchising
For the franchisor:	*For the franchisor:*
• Enables business expansion with third-party resources	• Difficulties regarding the maintenance of operational standards and discipline of the franchisee of the franchisee
• Generates economy of scale	• Problems in the process of breaking the bond with the franchisee
• Dilutes liability with competition	• Complexity regarding the division of earnings
• Strengthens the brand	• Formation of potential competition
For the franchisee:	*For the franchisee:*
• Strengthens performance in a	• Few opportunities for

ompetitive market	individual initiatives
• Guarantees the use of a consolidated brand with proven technology	• Cost with brand and methodology
	• Difficulty in selling the business
• Minimizes the risks of starting a business	• Risk of the franchisor failing
• Provides guidance and assistance in business management and benefits from network expansion	

Figure 7 – Advantages and disadvantages of franchising
Source: Noro, Rodrigues, Bittencourt, & Lengler (2012)

Brazil is a continental-sized country characterized by great regional diversity in economic, social, and cultural terms. The richest part, around Brasilia, has a gross domestic product (GDP) *per capita* equivalent to Italy, and the poorest part, such as the states of Maranhão and Piauí, has a GDP *per capita* comparable to that of Jordan. Finding a good location is a basic condition for franchise networks, so it is important to have specialized support and know-how from someone who has already experienced this process (Bretas & Alon, 2020).

According to data from ABF's *Pesquisa de Desempenho* 2021 (Performance Research 2021), even in the face of a crisis scenario due to the Covid-19 pandemic, there is a clear recovery, with 65.97% more sales in the 2nd quarter of 2021 compared to the 2nd quarter of 2020; nevertheless, the period shows a retraction of 4.60% compared to the same period in 2019. Analyzing in isolation by segments, of the 12 segments calculated by ABF, six showed positive results during the pandemic (construction; communication; IT and electronics; cleaning and conservation; health, beauty, and wellness; automotive services; and services and other businesses).

In 2021, still under the remnants of the pandemic, there was an increase of 3.9% in open stores, compared to 1.2% in 2020. When analyzing the Communication and the Information Technology and Electronics segment, it can be said that a growth of 2.6% does not represent a significant growth; however, when analyzing the sales channels of the entire franchised network, there was a growth of 1.1% in the use of e-commerce and 4.3% in the use of delivery applications, which directly influence the growth of the technology sector (ABF, 2021).

Other relevant information to the technology sector is that 72.20% of franchisors make e-commerce available as a sales channel, and 90.40% of franchisees have adopted this format. Finally, it is projected an increase in sales of 8%, an increase of 4% in new networks, an increase of 5% in new franchised units, thus generating an increase of 5% in formal jobs generated by this market (ABF, 2021). Given the above, assessing the feasibility of entering this market is something to be considered by managers of companies with potential for franchising their activities.

With the amplitude of this market at a national and international level, such relations must go through the sieve of norms and legislations to give legal security to both sides. This is so that the franchisor can ensure its business strategy and processes, and the franchisee can ensure the use of the brand and other benefits. Therefore, it is necessary to address these concepts, as demonstrated in the following section.

2.2.4   Regulations and limitations of companies under franchising

A stable and transparent regulatory environment is essential for the success of franchise agreements. Brazil has a specific law that regulates the franchise sector, contributing to a consistent legal system for national and international partners. The country also has regulations to protect intellectual property, another crucial requirement for franchisors. Brazil adopts the first-to-file system, guaranteeing rights to those who register the trademark first. The Brazilian Institute of Industrial Property is the responsible authority (Bretas & Alon, 2020).

The franchise agreement comprises the assignment of the license to use a product's trademark, the provision of services, and the distribution of goods, as established by franchisor and franchisee. The documents that consolidate the franchise system have fundamental importance to demonstrate, to the business offered by the franchisor, the necessary and precise transparency about its franchise system, and the *modus operandi* of its business (Noro, Rodrigues, Bittencourt, & Lengler, 2012).

The first Brazilian franchise law (Law 8,955) was enacted in 1994, establishing the contractual guidelines for franchise relations in the country, applied to all franchise systems, whether foreign or domestic. This law strengthened the Brazilian franchise industry, providing a secure legal environment for franchisors and franchisees. In 2019, as of Law 13,966, the previous law required adaptations, as in the case of the explicit exclusion of consumer or

employment relations from the franchisor-franchisee relationship, avoiding labor and consumer protection laws to franchise contracts. In addition, the new law requires more detailed information in the disclosure document (Bretas & Alon, 2020).

Another point to be addressed is the difference between franchising and licensing; while licensing allows the transfer of technology and knowledge, the franchising system does it through processes that involve greater legal security. To differentiate licensing from franchising, Figure 8 is presented.

FRANCHISING	LICENSING
- Contractual relationship between the franchisor and the franchisee, in which the franchisor offers the use of a recognized brand, grants the right of exclusive distribution of products exclusive distribution of products and services and maintains permanent attention to the partner's business by means of transfer of marketing knowledge, operation and management.	- Authorization granted to produce and/or sell some good or service in the market good or service in the market, acting under the name of the licensor. The licensor, in turn, authorizes this production under certain conditions certain conditions of quality of the product and services, which are previously approved before being launched in the market with its brand.
- It has standardized procedures, which must be followed by all franchisees.	- It presents greater flexibility for adjustments, which can be decisive for success in certain activities.
- Standardized administrative methods.	- Administrative autonomy.
- The legal relationship has as its objective the operation of the business.	- Legal relationship aims to protect the brand and the goods.
- In general, the actions taken are the same for the entire network.	- Differentiated actions, freedom to negotiate case by case.
- Commitment of the franchisor with the standard and concept of the business.	- Commitment to the exploitation of a given good.
- The fees paid pay, in addition to the assignment of use of the transfer of technology, training, and assistance provided by the franchisor.	- The fees paid refer only to the authorization of use and exploitation of licensed assets.
- It is not always possible to reconcile the interests of all partners.	- Greater versatility in driving interests.
- Adaptations in the system are slower and more complex.	- Faster and more local system adaptations.
- Regulated by Law 8,955 (Franchising Law).	- Regulated by the Industrial Property Law.

Figure 8. Differences between franchising and licensing
Source: Lima, Luna, & Sousa (2012)

One can observe that the product of the franchise system uses intangible assets to maintain its competitive advantage, transferring technology, know-how, software, and processes from the franchisor to the franchisee. Choosing which is the best option, which benefits, and which franchise will bring the best return can become a difficult decision; on the other hand, customers also go through a decision-making process to define where they will consume. This study addresses decision-making according to multiple criteria, which can be considered for such an action.

2.3 COMPETITIVE ADVANTAGE

Strategic thinking can be understood through four perspectives: classical, evolutionary, systemic, and processual. However, whatever their distinct classifications, the study of strategy involves understanding why certain firms achieve and sustain competitive advantages and obtain better performance than their competitors (Furrer, Thomas, & Goussevskaia, 2008).

The competitive advantage of a company is the value that is created for the consumer and that exceeds the cost of production, making it a unique producer from the perspective of the user, arising from the fact that the company operates with low cost or differentiation. A company has competitive advantage if it is able to create economic value superior to what the marginal competitor does in its product market (Matoso, 2013).

According to Barney & Arikan (2001) and Peteraf & Barney (2003), the rationale for generating competitive advantage can be expressed by the following statements:

a) competitive advantage is expressed in terms of the ability to create relatively more economic value;

b) to create more economic value than its competitors, a company must produce greater net benefits, through superior differentiation and/or low cost;

c) this task generates a competitive advantage by having a higher residual value for the same delivered value, generating savings;

d) the reference for comparison is the fringe competitor.

To have the potential to be a source of competitive advantage, the resource must be valuable to the extent that it exploits opportunities and/or neutralizes threats in the firm's environment. It must also be rare, imperfectly imitable, and finally, capable of being exploited by a firm's organizational processes (Matoso, 2013).

The effects of competitive advantage on organizational performance will depend on strategic management, contemplating moments of creation and others of monetization of the value created. Therefore, the study of competitive advantage through the observation of performance measures must be guided by the causal logic between value creation and performance in each context. Finally, one way to evaluate the generation of competitive advantage is by changing the variables that contemplate organizational performance.

2.3.1   Organizational performance

Performance is characterized as a multidimensional construct that translates into the efficiency and effectiveness of an action. Efficiency demonstrates the amount of resources used to achieve the result, whereas effectiveness demonstrates how much the result of an action met previously established expectations or requirements. Thus, performance measurement permeates the process of collecting qualitative and quantitative indicators to verify the outcome of actions (Kretschmer, 2021).

The purpose of measuring organizational performance is to find out whether the objectives proposed by the organization are being achieved. One of the difficulties encountered in this process is the performance indicators, which are usually different from one organization to another, precisely because each company has different peculiarities. To start the process, the ideal is that a survey of the potential value drivers and how they are related is conducted (Cordeiro & Almeida, 2011).

Organizational performance is a set of measures that analyze how organizations make use of the resources at their disposal, how they act in relation to opportunities and threats, and when the strategic objectives are achieved through mechanisms that control the efficiency, efficacy, and effectiveness of their actions. Thus, the performance of an organization concerns its situation in relation to its competitors and is measured through performance indicators (Tenório, 2001). Kretschmer (2021), on the other hand, cites that it covers three specific areas of companies:

a) financial performance, translated by profits, return on assets and investments;

b) product or service performance, verified on elements such as sales and market share;

c) shareholder return, such as value added and total shareholder return.

The measurement of organizational performance must be conducted according to a safe and transparent evaluative tool because the credibility of this analysis will be effective when the information produced is correct and clear to all those involved in the process. Therefore, it becomes necessary to choose the effective tool for measuring organizational performance, which must also take into account the context in which the company is inserted (Valmorbida, Ensslin, Ensslin, & Bortoluzzi, 2013).

Among the most varied tools available in the market, in a survey conducted in 2013, in national journals, 92 different tools used in performance evaluation were found, and the most

used were: Data Envelopment Analysis (DEA), the Balanced Scorecard (BSC), and Multicriteria Methodology for Decision Aid – Constructivist (MCDA-C). In addition, applications of tools not consolidated in the literature were identified (Valmorbida, Ensslin, Ensslin, & Bortoluzzi, 2013).

The measurement of organizational performance is predominantly carried out through the perception of the respondents, without the use of objective measures. Figure 9 shows the main metrics used to measure this performance.

Metrics	Authors
Balanced Scorecard	Yoshikuni; Albertin, 2017.
Company Growth	Chen; Preston; Swink, 2015; Fraj, Matute, Melero, 2015; Mikalef; Pateli, 2017; Qaiyum; Wang, 2018.
Sales Growth	Criado-Gomis; Iniesta-Bonillo; Cervera; Taulert, 2018; Dai; Liu, 2015; Galvin; Rice, 2014, Griffith; Noble, 2006; Liao; Rice, 2010; Lin; Wu, 2014; Kim; Cavusgil, 2009; Malik; Kotabe, 2009; Makkonen *et al.*, 2014; Neirotti; Raguseo, 2017; Nieves, 2016; Nieves; Dias-Menezes, 2016; Roberts; Grover, 2012; Rua; França; Fernández Ortiz, 2018; Swoboda; Olejnik, 2016; Wamba *et al.*, 2017; Wang; Senaratne; Rafiq, 2015; Wilden *et al.*, 2013; Shu; Su; Shou, 2017; Zhang *et al.* 2016; Yiu; Lau, 2008.
Profitability growth	Wang; Senaratne; Rafiq, 2015; Peng; Lin, 2017.
Market Development	Kim; Cavusgil, 2009.
Export Performance	Efrat *et al.*, 2018; Kaleka, 2012; Khalid; Bhatti, 2015; Morgam; Katsikeadd; Vorhies, 2012; Pinho; Prange, 2016; Wang *et al.*, 2017.
Operational performance	Kim; Suresh; Kocabasoglu-Hillmer, 2015; Sangari; Razmi, 2015; Vanpoucke; Vereecke; Wetzels, 2014
Efficiency	Qaiyum; Wang, 2018.
Cash Flow	Anning-Dorson, 2018; Jiang; Mavondo; Matanda, 2015.
Profit	Anning-Dorson, 2018; Cui *et al.*, 2018; Glaister *et al.* 2018; Griffith; Noble, 2006; Hughes *et al.*, 2020; Hung *et al.*, 2010; Malik; Kotabe, 2009; Mikalef; Pateli, 2017; Nieves; Dias-Menezes, 2016; Queiroz *et al.*, 2018; Swoboda; Olejnik, 2016; Rua; França; Fernández Ortiz, 2018; Wamba *et al.*, 2017; Zhu; Su; Shou, 2017; Yu-Yuan Hung; Chung; Ya-Hui Lien; 2007; Yi *et al.*, 2015.
Gross margin	Jiang; Mavondo; Matanda, 2015.
Market share	Cui *et al.*, 2018; García-Morales; Jiménez-Barrionuevo; Mihi-Ramírez, 2011; Mikalef; Pateli, 2017; Nieves; Dias-Menezes, 2016; Roberts; Grover, 2012; Zhang *et al.* 2016.
Market share	Anning-Dorson, 2018; Arend, 2013; Criado-Gomis; Iniesta-Bonillo; Cervera; Malik; Kotabe, 2009; Lee; Naylor; Chen, 2011; Taulet, 2018; Kim; Cavusgil, 2009; Nieves, 2016; Zhu; Su; Shou, 2017; Yiu-Yuan Hung; Chung; Ya-Hui Lien; 2007; Yi *et al.*, 2015.
Managers' perception of performance	Ahmed Dine, Rabeh; Jimenez-Jimenez; Martínes-Costa, 2013; Akter *et al.*, 2019; Asseraf; Lages; Shoham, 2019; Bag *et al.*, 2020; Bozic; Dimovski, 2019; Bustinza; Molina; Arias-Ar, 2010; Chaudhary, 2019; Cardoso; Kronmeyer Filho; Vaccaro, 2019; Chen *et al.*, 2019.
Q-Tobin	Girod; Whittington, 2017; Li; Liu, 2014; Sisodiya; Johnson; Grégoire, 2013; Wang; Kim, 2017; Wang; Sengupta, 2016
Sales Revenue	Anning-Dorson, 2018; Criado-Gomis; Iniesta-Bonillo; Cervera; Taulet, 2018; Hung *et al.*, 2010; Teo, Nishat; Koh, 2016; Yu-Yuan Hung; Chung; Ya-Hui Lien; 2007.
Profitability	Benitez-Amado; Llorens-Montes; Fernandez-Perez, 2015; Cui *et al.*, 2018; Engelen *et al.*, 2014; Jiang; Mavondo; Matanda, 2015; Lee; Naylor; Chen, 2011; Roberts; Grover, 2012; Urhann; Spieth, 2014; Zhu; Kraemer, 2002.

Stock Returns	Angulo-Ruiz *et al.*, 2018; Lam *et al*. 2019; Hsu; Sabherwal, 2012; Dong; Wu, 2015.
Return on investment from a focal fund	Ringov, 2017.
Return on Assets (ROA)	Bastanchury-López *et al.*, 2020; Bardero; Ramos; Chang, 2019; Bykova; Jardon, 2018; Dai; Liu, 2015; Danneels, 2012; Fainshmidt; Nair; Mallon, 2017; García-Morales; Hsu; Sabherwal, 2012; Hsu; Wang, 2012; Guo; Cao, 2014; Jiménez-Barrionuevo; Mihi-Ramírez, 2011; Jiang; Mavondo; Matanda, 2015; Li; Liu, 2014; Lin; Wu, 2014; Neirotti; Reguseo, 2017; Sánchez-Medina, 2020; Queiroz *et al.*, 2018; Teo; Nishat; Koh, 2016; Wang; Hsu, 2010.
Return on Equity (ROE)	Larraneta; González; Aguilar, 2017; Lin; Wu, 2014.
Return on Investment (ROI)	Anning-Dorson, 2018; Arend, 2013; Criado-Gomis; Iniesta-Bonillo; Cervera; Malik; Kotabe, 2009; Lee; Naylor; Chen, 2011; Taulet, 2018; Kim; Cavusgil, 2009; Nieves, 2016; Zhu; Su; Shou, 2017; Yiu-Yuan Hung; Chung; Ya-Hui Lien; 2007; Yi *et al.*, 2015.
Return on Sales (ROS)	Barbero; Ramos; Chang, 2017; Engelen *et al.*, 2014; García-Morales; Jiménez-Barrionuevo; Mihi-Ramírez, 2011; Guo; Cao, 2014; Lin; Wu, 2014; Schilke, 2014; Urhann; Spieth, 2014; Wamba *et al.*, 2017; Lau, 2008.
Return index of Thomson One Banker	Tasheva; Nielsen, 2020.
Economic Value Added (EVA)	Bykova; Jardon, 2018.
Turnover	Ahn; Mortara; Minshall, 2017.
Competitive Advantage	Mikalef *et al.*, 2020; Mikalef; Pateli; Van de Wetering, 2020.

Figure 9. Metrics used to measure performance
Source: Kretschmer (2021)

Growth, profitability, customer and employee satisfaction, efficient use of resources, and lean cost structure are variables that can assess whether the organizational performance is satisfactory. Also, companies with solid indicators that stand out in the market niche in which they operate can be used as criteria for assessing competitive advantage. Therefore, one way to assess whether the company is generating competitive advantage is to operationalize the variables of organizational performance.

Knowing that intangible assets and cooperation networks are capable of generating competitive advantage for companies and that there may be a mediation between cooperation networks and intangible assets to generate competitive advantage, the following research hypotheses are formulated:

H4: Intangible assets are positively associated with competitive advantage.

H5: Intangible assets, mediated by cooperation through franchising, are positively associated with competitive advantage.

Based on the above, having presented the concepts of intangible assets, cooperation networks, and organizational performance, it is possible to enter the intangible asset evaluation models.

2.4   INTANGIBLE ASSET MEASUREMENT MODELS

The present study presents a perspective of the effect of intangible assets on organizational performance. Given this, it is necessary to present the measurement models of intangible assets commonly used in the literature.

2.4.1   Intangible asset measurement models

When commenting on how to evaluate companies Copeland, Koller, and Murrim (2002) state that amongst the various models available, Discounted Cash Flow (DCF) is still a good methodology to evaluate companies. Demirakos, Strong, and Walker (2004) analyzed valuation reports from investment analysts in England for companies in the beverage, electronics, and pharmaceutical sectors, so that they confirm that analysts use traditional methodology, using both DCF and multiples.

There is currently a growing interest in the study of intangible assets, particularly intellectual capital. In the evaluation process, the total value of a company is sought and, in this process, there is no distinction between what tangible value is and what is intangible. Bontis (1998) tries to distinguish between intangibles and intellectual capital. For him, intellectual capital does not include intellectual property assets, trademarks, patents, and various other rights that can be recorded in accounting. In Lev's (2001) view, the intangible asset can be defined as a right to future benefits, which has no physical or financial body.

Shiu (2006) alerts to the need for the creation of new economic approaches to measure corporate performance, using intellectual capital as the prime production factor. Hoss (2008) presents a systematic that proposes the grouping of the variables that add value in quadrants with support and adaptation of the authors Crawford (1994), Kaplan & Norton (1997), Edvinson & Malone (1998), Sveiby (1998), Lev (2017); Kayo (2002), Smith & Parr (2000). Also for Vigorona (2004), 85% of the value of Chilean companies is allocated to intangible assets. The

creation of tools, such as Economic Value Added (EVA), Market Value Added (MVA) and Total Shareholder Return (TSR), is the first real step towards valuing intangibles.

In this study, two models that allow the measurement of intangible assets are presented; the first to be addressed is the model of Bontis *et al*. (1999), updated by Bontis (2001), shown in Figure 10.

Elements	Description
Skandia Navigator	It is a set of indicators showing the intellectual capital that involves five focus areas - financial, customer, process, renewal, and development of human capital. These indicators form a universal report with 112 measures, which form a dynamic and holistic model.
Intellectual Asset Valuation	It is a flexible and dynamic model, considered second generation, which enhances the visualization of value creation through a holistic view. The company defines from its identity and strategy a set of indicators that comprise the path of value creation and performance measurement.
Intangible Assets Monitor	The model is based on the classification prepared by Sveiby (1997), which divides intellectual capital into employee competencies, internal structure (patents, systems, among others), and external structure (relationship with clients and suppliers) with a focus on growth, renewal, efficiency, and stability/risk. Based on these concepts, indicators are established for measurement and monitoring.
Balanced Scorecard	It is a multidimensional measurement system, which includes input and output indicators, focused on the inside and outside of the organization, as well as financial and non-financial indicators, in the short and long term. The BSC is organized into four perspectives: financial, customers, internal processes, and learning and growth. The indicators from this perspective must have a cause and effect relationship, culminating in financial results.
Market Value Added (MVA^{TM}) and Economic Value Added (EVA^{TM})	The former is an added market value indicator that measures the difference between a company and the capital invested in it. The MVA^{TM} reflects the capital market view and incorporates the company's expected future results into the assessment. The EVA^{TM} is the economic value added, which is a financial indicator that evaluates the creation of wealth for the shareholder; it is based on the company's financial statements and therefore reflect past performance. It collaborates in tying the budget to the strategic planning and the definition of the company's goals.
Q-Tobin	It aims to measure the relationship between the market value and the replacement value of physical assets.

Figure 10 – Theoretical foundation of Bontis' model
Source: Peinado (2016).

For the calculation of Q-Tobin, shown in Figure 10, the following formula applies:

Q = (EMV + LMV) / ARV

Where:

EMV = Equity Market Value (company's equity)

LMV = Liability Market Value (company's third-party capital)

ARV = Asset Replacement Value

Another means of measuring intangible assets is given by the model proposed by Hoss (2003). Scientific and methodological procedures, such as bibliographical research, the deductive method and inductive reasoning, were utilized in the construction of the model. The first procedure proposed is the grouping of the variables that interfere in the creation of value to the organizations, in the human, processes, structural, and relational quadrants, as can be seen in Figure 11 (Hoss, 2008).
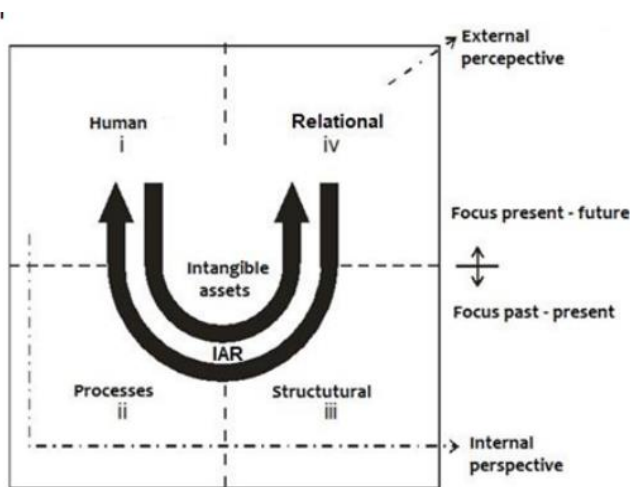
Figure 11 – Measurement of intangible assets
Source: Hoss (2008).

The model presented in Figure 12 is divided into steps; first, it is necessary to know the company, calculate the adjusted intangible profit, so that, after knowing the demand, it is possible to determine qualitative and quantitative variables, determine the Value of Intangible Assets (CIV), determine the Intangible Coefficient (CIC) and apply the following formula to determine the Value of Intangible Assets (VIA) (Hoss, 2008):

VIA = (IAR + CIV) * (1 + CIC)

where:

VIA = Value of Intangible Assets

IAR = Intangible Adjusted Result

CIV = Canvass of Intangible Value

CIC = Canvass of Intangible Coefficient
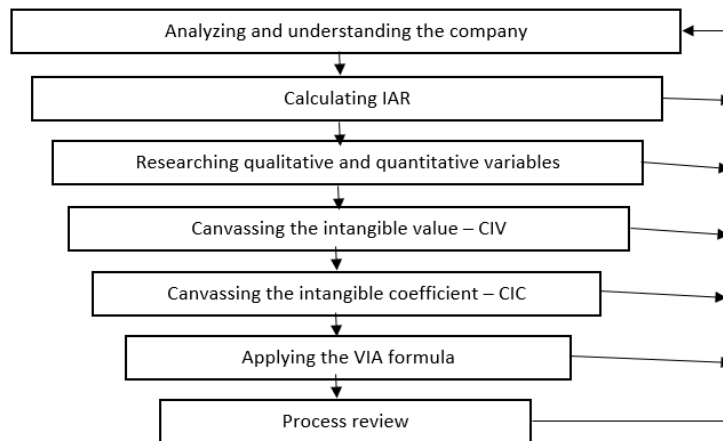
Figure 12 – Procedures for determining the value of intangible assets
Source: Hoss (2008).

Finally, Palacios and Galván (2007) indicate that there is no internationally accepted framework as a reference for identifying, measuring, and disseminating appropriate information about intangibles in determining the value of organizations.

2.4.2 Conceptual designs of previous studies on intellectual capital and organizational performance

Finally, the models that preceded this study are presented, which formed the theoretical basis for developing the conceptual design in section 2.5. The studies are Bontis (1998), Sharabati, Jaward, and Bontis (2010), Mention and Bontis (2013), and Tefera and Hunsaker (2021b).

Bontis (1998) aimed at forming a conceptual framework existing in the literature concerning intellectual capital, by means of a conceptual design involving the three dimensions of intellectual capital and organizational performance. The structural modeling technique (Partial Least Squares - PLS) was used, based on data collected from students of a Master Business Administration (MBA) course. As a result, he obtained an explanatory power of 56.02% on the organizational performance dependent variable.

O modelo conceitual está apresentado na Figura 13. Esse estudo aborda, como sugestões para estudos futuros, a aplicação em ramos de atividade específicos, além de fazer comparações com pesquisas realizadas em outros países.
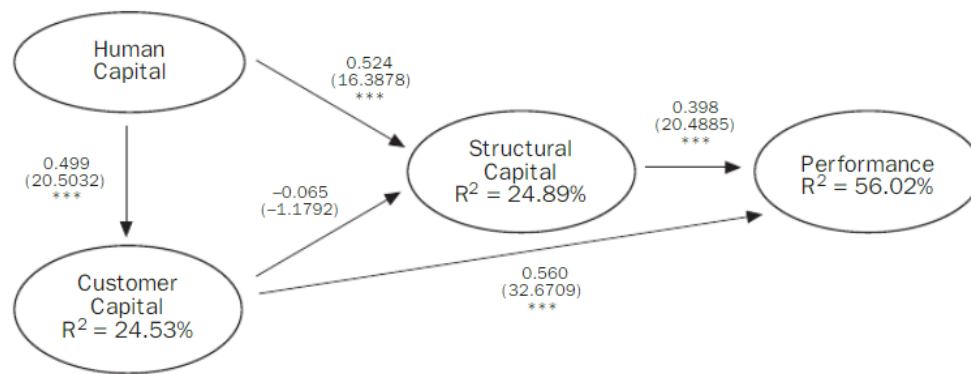
Figure 13 – Bontis's Structural Model
Source: Bontis (1998).

Another research that addressed the effect of intellectual capital on performance was the study by Sharabati, Joward, and Bontis, which aimed to measure the effect of intellectual capital on organizational performance in Jordanian pharmaceutical industries. This study is an evolution of Bontis' (1998) construct, reaching an explanatory power of 51.70%. As suggestions for future studies, replication and longitudinal studies were recommended.

The study, conducted by Mention and Bontis (2013), aimed to investigate the effects of intellectual capital and its components on banking institutions in Belgium and Luxembourg. Based on Bontis' model, he introduced new elements, such as the analysis of the effect of human capital on organizational performance and the analysis of the conjugate components. PLS was used and an explanatory power of 33.40% was obtained, as shown in Figure 14.
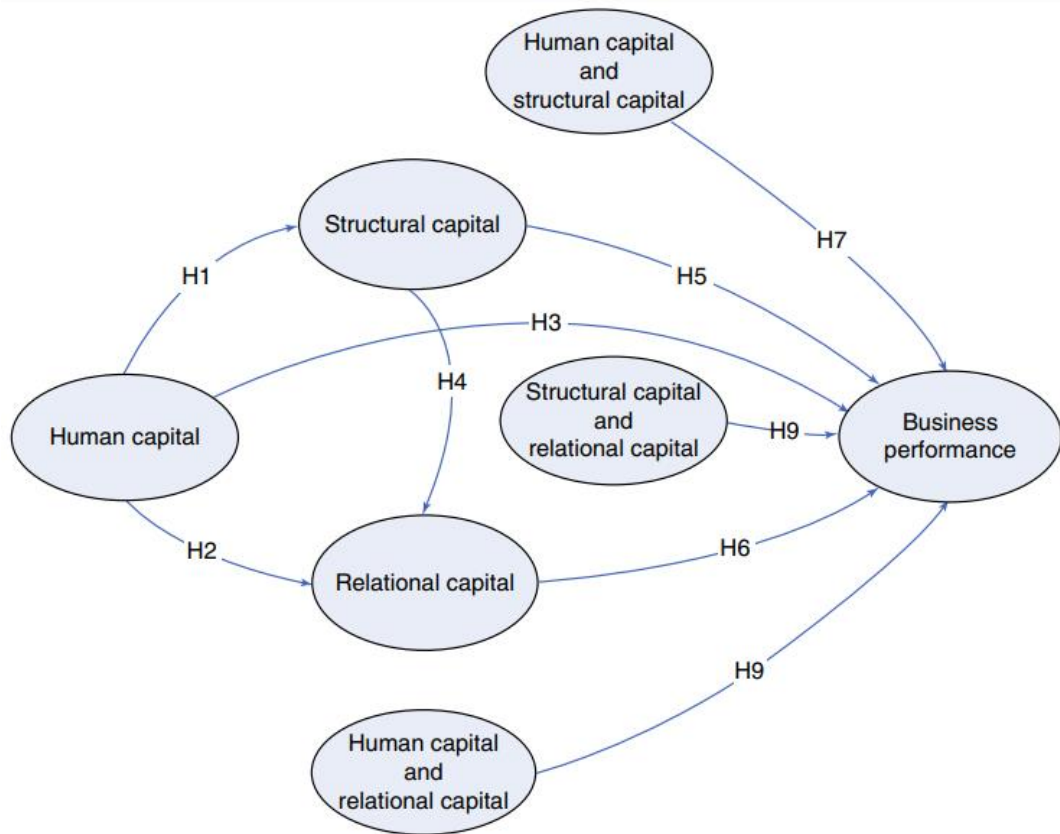
Figure 14 – Mention and Bontis's structural model
Source: Mention and Bontis (2013).

Another study conducted concerning the effect of intangible assets on performance was that of Peinado (2016) who, according to Figure 15, presented his conceptual model following the model proposed by the previously mentioned authors, adding an evaluation of indirect effects, in which structural capital affects human capital, customer capital affects human capital, and customer capital affects structural capital, all influencing organizational performance. The questionnaire was applied to management positions in a pharmaceutical industry, so that it was obtained, as a result, the explanatory power of 74.30% of intellectual capital on performance.
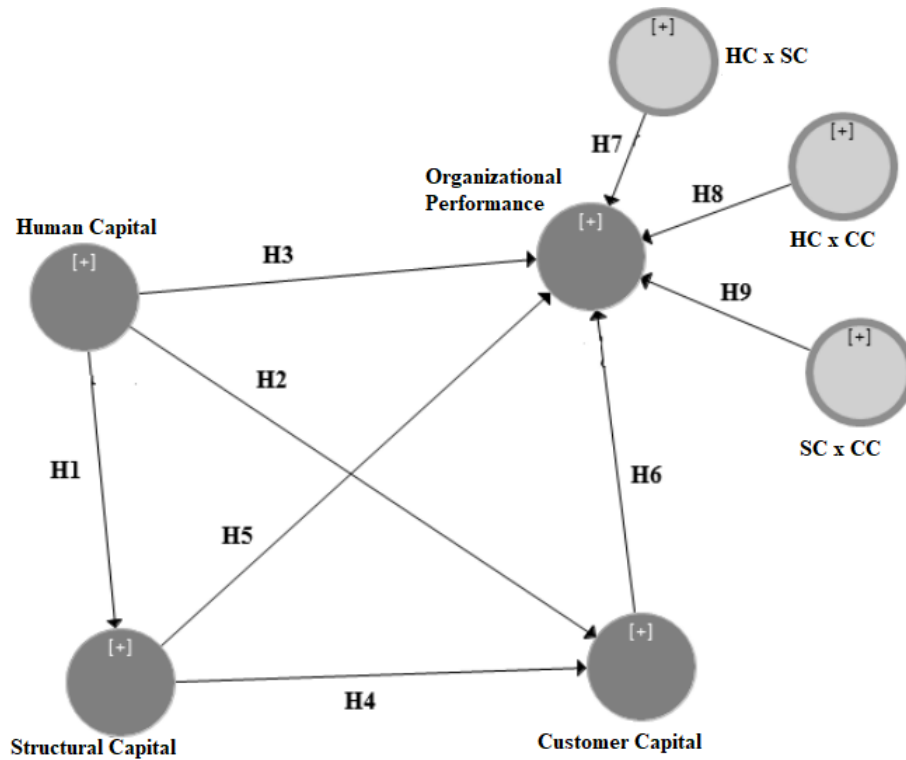
Figure 15 – Peinado's structural model
Source: Peinado (2016).

Finally, the base study used to construct the conceptual design of this study was that of Tefera and Hunsaker (2021b), in which the authors apply structural equation modeling considering intangible assets as a HOC. The model is presented in two stages; the first stage checks the effects of the dimensions of psychological capital on itself, as first-order variables. In the sequence, the effect of human capital, structural capital, customer capital, and psychological capital on the intangible asset is verified as a second-order variable.

In the second step, the authors measured the effect of intangible assets on competitive advantage as a third-order variable, as presented in Figure 16. The result shows a 42.6% explanatory power of intangible assets on competitive advantage.
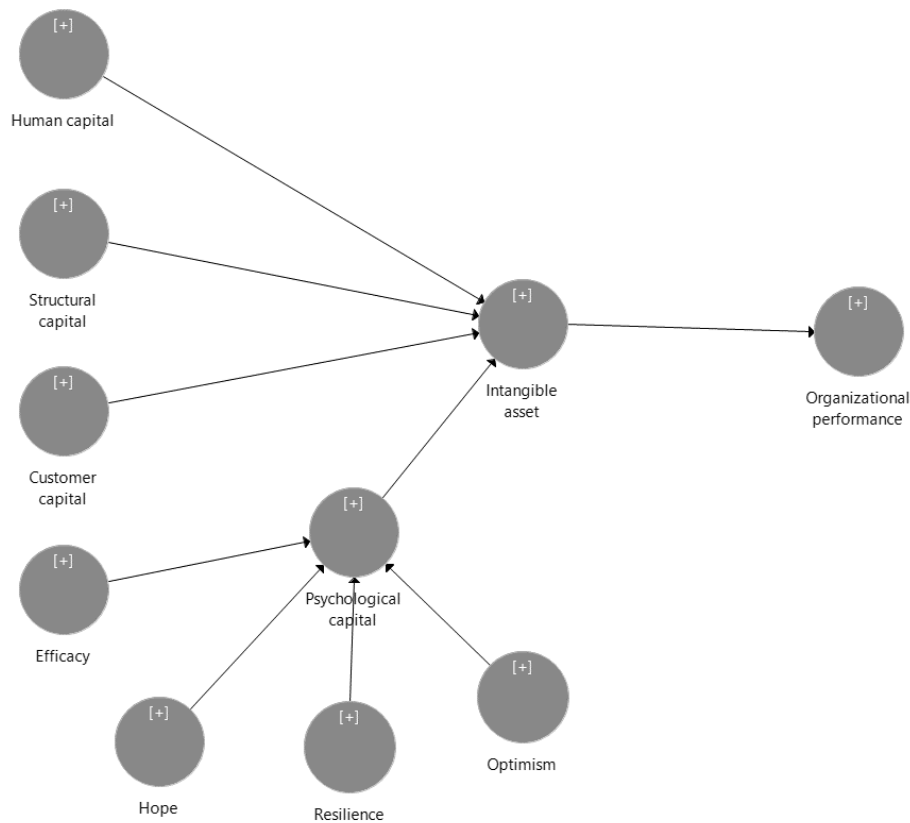
Figure 16 – Tefera and Hunsaker's structural model (2021b)
Source: Tefera and Hunsaker (2021b).

After presenting the conceptual models used as a basis for the construction of this study, the presentation of the conceptual design and hypotheses of this study follows.

2.5 CONCEPTUAL DESIGN AND HYPOTHESES

The conceptual design presented in this study is Tefera and Hunsaker's (2021b) effect of intangible assets on performance, which involves the four dimensions of intellectual capital: human capital, structural capital, customer capital, and psychological capital. The present model checks the effect of intangible assets on performance with first-, second-, and third-order variables, using a HOC approach.

Tefera and Hunsaker (2021b) used repeated indicators to illustrate the model. Sarstedt *et al*. (2019) suggested using repeated indicators when the HOC is treated as an exogenous construct and the reason is to minimize bias. Intangible assets in entrepreneurship, as well as in

other management field, are usually expressed as exogenous constructs based on underlying theories. Therefore, it is appropriate to use the repeated indicator approach.

The positive relationship between the dimensions intellectual capital and organizational performance has been studied by several authors, such as Bontis (1998), Bontis, Keow, and Richardson (2000), Cabrita and Bontis (2008), Sharabati, Joward, and Bontis (2010), Mention and Bontis (2013), Peinado (2016), and Tefera and Hunsaker (2021b).

Tefera and Hunsaker (2021a) applied this theory in a sample of 90 small and medium-sized innovative companies in South Korea, so that they evaluated the effect of the dimensions Effectiveness, Persistence, Resilience, and Optimism on a dimension of intellectual capital, the psychological capital. This study further verified the effect of this dimension on competitive advantage, as shown in Figure 17. The explanatory power of psychological capital on competitive advantage was 36.80%.
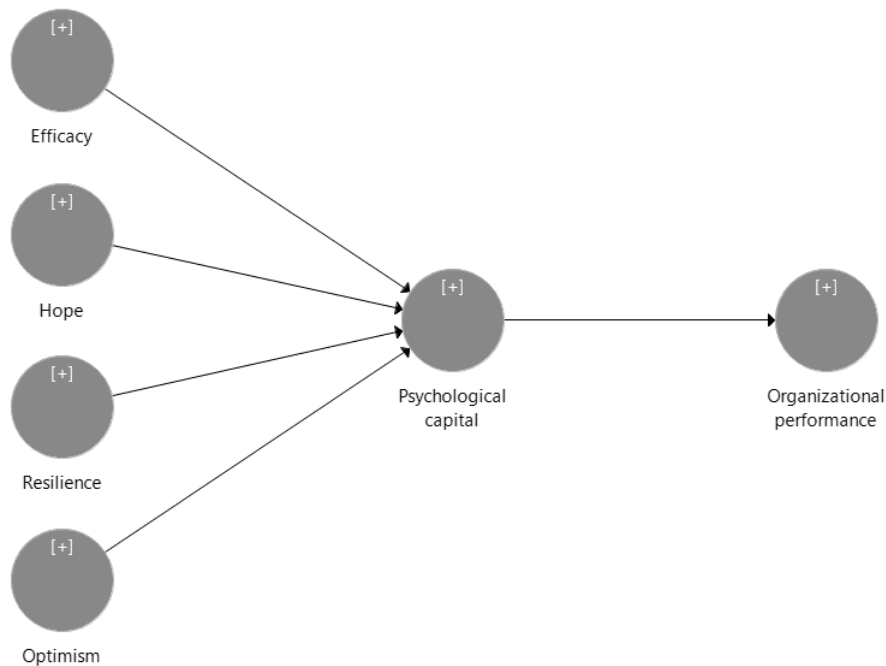
Figure 17 – Tefera and Hunsaker's structural model (2021a)
Source: Tefera and Hunsaker (2021a).

Tefera and Hunsaker (2021b), as shown in Figure 17, increased the sample to 100 companies in South Korea, which increased the other dimensions of intellectual capital, human, structural, and customer capital, presenting an explanatory power of 42.6% on competitive advantage. In other words, a positive variation was presented including the other dimensions of intellectual capital on competitive advantage.

The present study intends to include Cooperation by franchising as a mediating variable of intangible assets in competitive advantage. Figure 18 presents the structure with first, second and third order latent variables, which are analyzed in section 6 of this study.
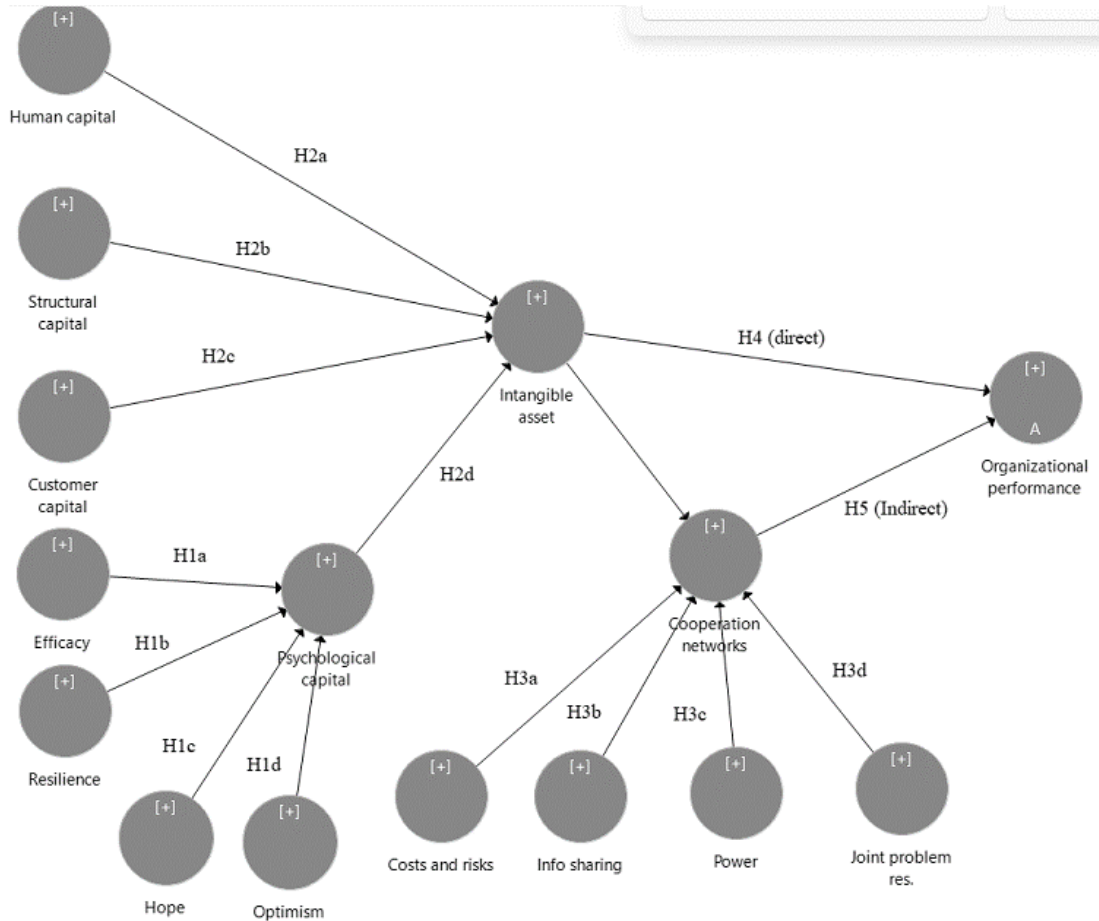
Figure 18. Conceptual research design
Source: Elaborated by the author (2022).

After presenting the conceptual research design, the following section highlights the methodological path for the application of the study.

3 RESEARCH METHOD AND TECHNIQUES OF TECHNICAL PRODUCTION

This chapter presents the methodological procedures adopted in this research and the way in which the data analysis and collection was conducted. Thus, the structure of this chapter is divided into the research design, data collection procedures, data analysis procedures, limitations of the methods, and established techniques.

3.1 RESEARCH DESIGN

To achieve the proposed objective, the research design was carried out. In order to facilitate the understanding of how the conceptual design is given, Figure 19 was built to present how the answer to the problem and the conclusion of each specific objective is shown.
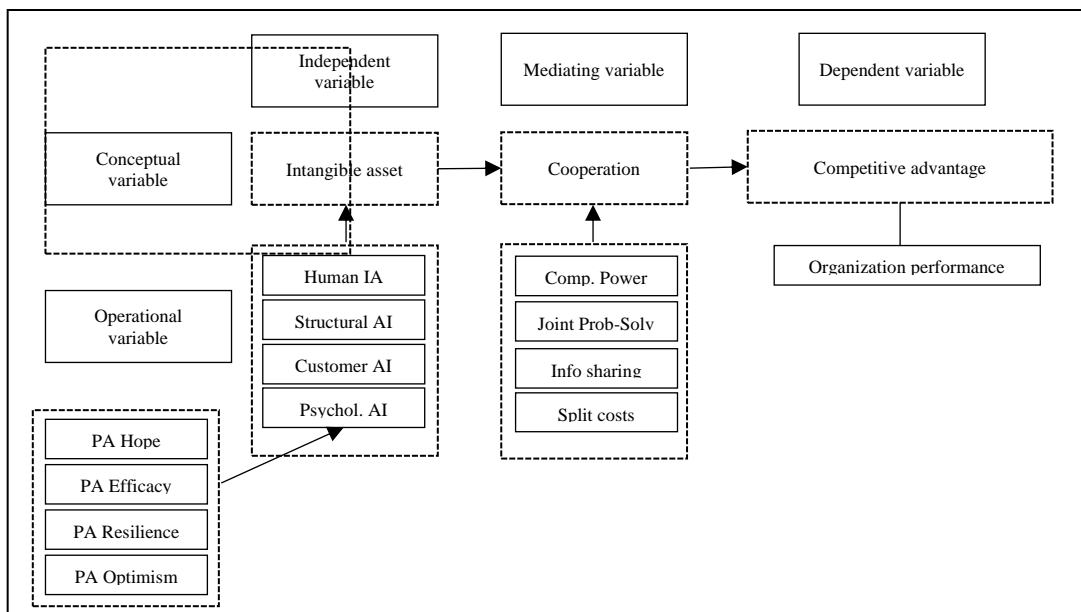
Figure 19 – Processes for answering the Research Problem
Source: elaborated by the author (2022).

As seen in Figure 19, it is assumed that the dimensions of cooperation networks can act as a driver in intangible assets (human, structural, costumer, and psychological capital), generating competitive advantage measured by organizational performance. Furthermore, it is possible to verify that the psychological capital is composed of the dimensions efficacy, hope, resilience, and optimism.

First, the effect of the dimensions efficacy, hope, resilience, and optimism in the composition of the psychological capital was verified with the intention of perceiving the significance of each dimension; after that, this dimension was included in the intangible asset. Consequently, the effect of the human, structural, customer, and psychological dimensions on the company's intangible assets was verified.

To proceed with the model application, it is necessary to verify the effect of the dimensions competitiveness power, joint problem-solving, information sharing, cost sharing, and risk on cooperation. Finally, the effect of intangible assets, mediated by cooperation, on competitive advantage was verified.

As to objectives, the study is characterized as applied research due to the intention to serve as support to business management, since it involves local interests and intends to generate knowledge for practical application aimed at solving specific problems. Furthermore, it is classified as descriptive since it describes quantitative and qualitative variables, establishing relationships among them (Richardson *et al*., 1999, Marconi & Lakatos, 2003).

Regarding the approach, this is a quantitative research, as it is characterized when its objective is to discover and verify relationships between variables (Beuren, 2010). To this end, it was used a single case study, operationalized through a survey conducted with employees of an IT company located in the state of Paraná. The company is focused on developing IT solutions in two verticals, with about 65 employees and at least 80 other business partners and indirect employees.

IT companies are preponderantly composed of intangible capital (Lima & Carmona, 2011); however, in the company studied, there are no records of the application of a model of measurement of intellectual capital or organizational performance. Thus, it is expected that the study contributes with the practical context, in the sense of helping the company in the measurement of its intellectual capital and thus be able to maximize the generation of value as from the combination of its human, structural, customer, and psychological capital.

For the planning and execution of the case study, the script of activities is shown in Figure 20.

Work Planning	Definition of the research problem; Definition of the objective; Literature review; Elaboration of the conceptual model and hypotheses.
Quantitative Analysis	Construct design; Survey development; Validation and application; Performing the analysis via PLS; Analysis of the results.
Intervention	Report construction with the findings from the analysis of the quantitative data; Introducing the feasibility of creating competitive advantage through cooperation through franchising.

Figure 20 – Case study script
Source: elaborated by the author (2022).

The sample was calculated using the G*Power software, with a 90% confidence interval and placing the six independent interactions that the dependent variable of the structural model received, resulting in the need for a sample of 59 respondents, which were defined randomly, since the objective was to collect in a census form. The research instrument consisted of a questionnaire, in an online version, with a Likert scale from 1 to 7, with 76 questions based on the theoretical construct presented in Figure 21. Construct validity was also based on the literature and, subsequently, factor, convergent, and discriminant validity was performed.

In view of the research design up to this point, the procedures for data collection and analysis follow.

3.2 DATA COLLECTION PROCEDURES

In the quantitative analysis stage of the study, an online survey (Google Forms) was used as a data collection technique, which was answered by managers, employees, and business partners. The development and validation of the instrument and survey were designed based on the literature review, and construct validity was achieved with factor, convergent, and discriminant validity.

The construct was elaborated considering the topics Intangible Assets, Cooperation Networks, and Competitive Advantage, as shown in Figure 21. Each topic was stratified into dimensions as shown in the literature. Next, each dimension was presented through the variables and, finally, the authors who support the theme were evidenced.

RESEARCH CONSTRUCT					
Topic		Dimension	Variable	ID	Support
Intangible Assets	Intellectual capital (structure according to Bontis)	Human capital	Successor Training Program	HC1	Mention & Bontis (2013); Sharabati, Jawad & Bontis (2010); Cabrita & Bontis (2008); Bontis (1998)
			Cooperation in team tasks	HC2	
			Skills Upgrade Training	HC3	
			Employees are creative and brilliant	HC4	
			Employees satisfied with the company	HC5	
			Comprehensive recruitment program	HC6	
			Employees encouraged to express themselves	HC7	
			Employees always perform their best	HC8	
			Low Turnover	HC9	
			New ways of working (remote, hybrid)	HC10	
			Satisfactory internal communication	HC11	
			Consistency in partner decisions	HC12	
		Structural capital	Reduced software deployment process	SC1	Mention & Bontis (2013); Sharabati, Jawad & Bontis (2010); Cabrita & Bontis (2008); Bontis (1998)
			Implements most of the ideas	SC2	
			Pride in being efficient	SC3	
			Internal systems with easy access to relevant information	SC4	
			Internal systems support innovation	SC5	
			Non-bureaucratic processes	SC6	
			Favorable and comfortable company culture	SC7	
			Well-developed variable compensation system	SC8	
			Company continuously develops processes	C9	
			Implementation of new technologies	SC10	
			Well-defined internal processes	SC11	
		Customer capital	Satisfied customers with the company	CC1	Mention & Bontis (2013); Sharabati, Jawad & Bontis (2010); Cabrita & Bontis
			Reduced troubleshooting time	CC2	
			Growing market share	CC3	
			Customers loyal to the company	CC4	
			Pride in being market-oriented	CC5	
			Regular contact with industry associations	CC6	

			Partnerships in R&D, production, marketing, and distribution	CC7	(2008); Bontis (1998)
			Several distribution channels	CC8	
			Strategic alliances present	CC9	
			Customer Focus	CC10	
			Independence from activities related to third parties	CC11	
	Psychological capital	Efficacy	Solution analysis for long-term problem	EF1	Luthans *et al.* (2007); Malone (2008)
			Representing the team in meetings	EF2	
			Contributing to discussions	EF3	
			Goal setting	EF4	
		Hope	Creativity in problem situations	HO1	
			Persistence in the objectives	HO2	
			Goal achievement	HO3	
			Feeling of success	HO4	
		Resilience	Difficulty in overcoming adversity	RE1	
			Difficulty management	RE2	
			Individual problem-solving ability	RE3	
			Calmness in stressful situations	RE4	
		Optimism	Optimism in uncertain situations	OP1	
			Pessimism	OP2	
			Optimism in the course of the activities	OP3	
			Optimism about the future	OP4	
Cooperation networks	Cooperation networks	Costs and risk	Trust in network management	CN1	Tálamo (2008), Tatsch, 2010
			Credibility of network managers	CN2	
			Equal sharing of risks and costs	CN3	
		Power and competitiveness	Appropriate marketing and advertising	CN4	
			Variety and diversity of products and services	CN5	
			Network innovation capacity	CN6	
		Information sharing	Partners clearly know the objectives	CN7	
			Integration between business partners	CN8	
			Freedom of information exchange	CN9	
			Information sharing	CN10	
		Joint resolution	Level of participation in network decisions	CN11	
			Joint process development	CN12	
			Joint problem solving	CN13	
Competitive advantage	Organizational performance	Financial performance	Growth	OP1	López-Nicolás & Merono-Cerdán (2011);
			Profitability	OP2	
			Customer satisfaction	OP3	
			Constantly growing customer portfolio	OP4	

			Lean cost structure	OP5	Choi & Lee (2002, 2003); Hoque & James (2000); Quinn & Rohrbaugh (1983)
			Business success and performance	OP6	
		Process performance	Quality products	OP7	
			Efficient use of resources	OP8	
			Quality-oriented internal processes	OP9	
			Rapid solution development	OP10	
		Internal performance	Employee satisfaction	OP11	
			Qualified employees	OP12	
			More creative and innovative employees	OP13	

Figure 21 – Research Construct
Source: elaborated by the author (2022).

Figure 21 highlights the questions used in the study, adapted to the context of the company that is the object of the case study. The questions of the intellectual capital topic were based on the questionnaires of Sharabati, Jawad and Bontis (2010), applied in the pharmaceutical industry segment and in the questionnaire of Mention and Bontis (2013), considered in the banking segment, and both used Bontis (1998) as a basis. In addition, the psychological capital dimension was added, originating from the studies of Luthans *et al*. (2007) and Malone (2008). The questions of the topic cooperation networks were based on the surveys applied in the studies of Thalamo (2008) and Tatsch (2010). The questions of the topic organizational performance are based on the research of López-Nicolás and Meroño-Cérdan (2011), which compare the company's performance in relation to competitors; these authors used the surveys of Quinn and Rohrbaugh (1983), Hoque and James (2000), and Choi and Lee (2002) as a basis.

The data collection instrument is in Appendix A. The scale used for the survey was the 7-point Likert scale.

Since there was an aggregation of dimensions for the evaluation of competitive advantage, operationalized by organizational performance, a pre-test was necessary, which collected 62 responses with random respondents. The pre-test was executed with the original survey with 77 observable variables. During the application of the research instrument, feedbacks were collected from the respondents regarding the questions, which resulted in adjustments in the description of the questions. After the adjustments, a confirmatory factor analysis was performed with the pre-test data, and the same statistical tests were performed to

validate the research model. Thus, the results indicated quality, consistency in the model, predictive power, and significance; thus, the final collection could be followed up.

The seven latent variables were initially built with 77 observable variables and later reduced to 57 in view of the feedback collected during the pre-test application and the quality results of the model. They were then divided into 12 first-order dimensions (Human capital, Structural capital, Customer capital, Effectiveness, Persistence, Resilience, Optimism, Costs and risks, Information sharing, Power and competitiveness, and Joint problem solving), 2 second-order dimensions (Psychological capital and Cooperation networks), and 1 third-order dimension (Intangible assets and Organizational performance).

Given the adjustments made to the data collection instrument, the survey was collected by census, resulting in 75 respondents, which will be detailed in the results section.

3.3 PROCEDURES AND DATA ANALYSIS

After data collection, the procedures used were descriptive statistics using Minitab 19 software and PLS-SEM structural equation modeling with HOC performed by SmartPLS 3 software.

HOCs help researchers to model abstract concepts according to their dimensions. HOC modeling is applied when a given construct is considered abstract, requiring it to be further decomposed into concrete subdimensions. Within this framework, the abstract concept is the HOC and its subdimensions are the lower-order constructs (LOC). HOC modeling is referred to in some literatures as a hierarchical latent variable process (Becker *et al*., 2012) and a hierarchical component model (Cheah *et al*., 2019). HOC modeling allows for sparingly conferring the model of great explanatory power, resulting in a model that is simple to understand and explain (Tefera & Hunsaker, 2021a).

Once the HOC is defined, the structural equation model allows for simultaneous testing of hypotheses about dimensionality and interrelationship between latent and observed variables. The structural equation analysis method chosen was PLS, which, in essence, is an interactive combination of the construct and building a causal relationship between the construct chain (Cooper & Schindler, 2011; Chin, 1997).

The analysis consisted of three steps, executed simultaneously by SmartPLS; first, the effect of the psychological capital dimensions was measured; next, the effect of the four

dimensions (human, structural, customer, and psychological) on the intangible asset was verified, and finally, the effect of the intangible asset on organizational performance mediated by the latent variable cooperation was analyzed. Figure 22 presents the application of HOCs.
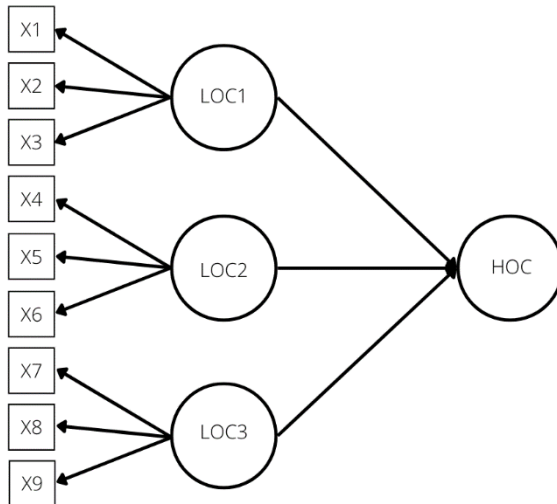
Figure 22. Higher-order construct
Source: adapted from Becker *et al.* (2012)

To better understand the averages and to highlight observable variables in positive and negative highlights, a scale was built to separate variables that require action by the company, negative, and evidenced, positive. Table 1 presents this division.

Table 1:
Kanitz thermometer

Classification	Interval
Intangible Liabilities	Lower than 3.00
Neutral	Between 3.00 and 4.00
Intangible Assets	Above 5.00

Source: adapted from Kanitz (1978).

The scale used in this study is the 7-point Likert scale, while the Kanitz thermometer operates on a scale of -7 to 7. An adaptation of the scale was necessary to be able to construct the graph. Considering the calculation of the interval through the quartiles of the sample, to generate intangible assets, the result should be higher than 5.00, neutral status between 3.00 and 4.00, and intangible liabilities lower than 3.00.

In the mediation analysis, the precepts of Hair *et al*. (2017) and Bido and Silva (2019) were followed, for which the antecedent variable must influence the mediator and the mediator

must influence the consequent. Bido and Silva (2019) point out that, for full mediation confirmation, the direct effect should be non-significant and the indirect effect should be significant.

Finally, the data analysis procedures will be segregated into respondents' profile, descriptive statistics, and structural equation modeling. For the descriptive statistics, the individual mean of the variables and the mean of the dimensions were verified, applying Kanitz thermometer adaptation to identify the means of the dimensions evaluated. For the structural equation modeling, the significance, Cronbach's alpha, reliability and validity by dimension, collinearity, and discriminant validity tests were performed. The conceptual model of this study consists of HOC, presenting first, second, and third order variables, as presented in Figure 22.

Given the procedure and data analysis, the professional competencies employed in solving the problem were presented. The analysis was carried out using descriptive statistics and structural equation modeling.

3.4   PROFESSIONAL COMPETENCIES EMPLOYED IN THE SOLUTION OF THE PROBLEM

For the planning and execution of this study, the researcher needed professional skills such as:

a) Knowledge about intangible assets, high performance teams and the basics of emotional competencies, cooperation networks and organizational performance, and data collection and analysis techniques; in addition, knowledge about the company being studied and the intervention to be carried out was required.

b) Skills in planning, executing activities, developing an action plan, and negotiation techniques for possible actions to be taken.

c) Having initiative, persistence, and focus on results.

d) Meeting the planned schedule and the delivery of what was planned.

3.5   LIMITATIONS OF RESEARCH METHODS AND TECHNIQUES

Considering the above, and given the choice of a case study as a research strategy and procedure, the limitation is the non-generalization of the results but only analytical generalizations (Yin, 2005).

The environment and the market in which the organization operates may or may not be predominant in influencing decision making and the models used to define trends. Furthermore, the measurement of intangibles and market value may not reflect significant changes in the business environment, such as pandemic scenarios, disasters involving the organization's activity, and economic crises.

In as much as the conceptual model is concerned, the starting point was the literature review and the reference authors in the study's field. Therefore, one can observe that limitations may occur when possible other dimensions that should be considered to reflect the reality concerning the effect of intangible assets on organizational performance and, consequently, on the competitive advantage of companies, are not observed.

Still, during the data collection phase, there is the limitation that the sample collected is centered on employees and business partners, so their perception may be biased, being restricted to their vision and not reflecting the sector as a whole.

Finally, as a practical limitation, it is considered that the present study seeks to verify if the psychological capital affects the intangible asset and if the intangible asset mediated by cooperation influences the competitive advantage of organizations. The objective was to verify whether, within companies in the information technology segment, it is possible to work with franchising as a form of economic growth at the level of franchisor and franchisee, such as assessing the value to be marketed by franchises. Thus, the applicability depends on variables beyond the control of the researcher.

4   CONTEXT OF THE PROJECT OR PROBLEM-SITUATION

The company used for the intervention has 20 years of operation, serving, with solutions in Enterprise Resource Planning (ERP), several segments in 23 Brazilian states. It has approximately 60 direct employees and 26 representations spread throughout the country.

It is a family company managed by its founder, which is divided into six departments (administrative, financial, fiscal, technical support, commercial, and software factory). In 2022, the six departments are subdivided into: one for top management, the commercial department responsible for capturing and maintaining a client portfolio, two departments responsible for technical support to the solutions provided by the company, one financial department responsible for receipts, payments, and collections, and finally one software factory responsible for the creation of new products, analysis, prototyping, development of customizations, and bug and failure corrections.

Currently, in 2022, the company has a consolidated cooperation network, with business partners in several states of the country, including plans for expansion to neighboring countries in Latin America. Up to the time of this research, the company does not have a franchising structure in place or under analysis, so this scenario will be presented and its feasibility verified. It is noteworthy that, even in a pandemic scenario, the franchising market shows growth in 50% of the segments served, with a projected growth in revenues of 48.4% in 2021, compared to the same period in 2020. Allied with the information technology segment, which benefits directly and indirectly from franchising, it can become a tool for sales growth and thus generate a competitive advantage in the market.

In view of the characteristics of competitiveness and cooperation capacity by franchising, allied to a segment with relevant use of human and psychological capital, it is understood that the creation of intellectual capital is a driving factor for the success of companies in this sector.

5   TYPE OF INTERVENTION AND MECHANISMS ADOPTED

To conduct the intervention in the organization, the case study script is used, in which the first step is the definition of the problem, objective, and hypotheses. The second step is the quantitative analysis, which is the analysis of the problem situation. Furthermore, there is the intervention, which results in proving or not the positive effect of a cooperation environment through franchising in a company in the information technology segment.

This type of intervention is characterized as a technical opinion once it aims to diagnose the problem-situation. The diagnosis is then passed on in the form of a report with the results obtained in the research.

The report proposes to assess whether the psychological capital that exists within the company is capable of generating positive effects on intangible assets and, consequently, generate competitive advantages for the company that is the object of the study. Furthermore, there are the results and implications of the application of the conceptual model, which considers the independent variables human capital, customer capital, structural capital, and psychological capital, the mediating variable cooperation, and the independent variable competitive advantage.

In view of this information, the report ends with suggestions for improvement in relation to each dimension of intellectual capital and the feasibility of opening franchises, presenting costs and revenues arising from this new way of working.

6   ANALYSIS AND INTERPRETATION OF RESULTS

6.1   RESPONDENTS' PROFILE

The respondents' profile was delineated based on the following variables: department, location, time in the company, time in a job, gender, level of education, and age. The results obtained are presented in Figure 23.

Department		Location	
Software Factory	41.33%	Internal	76.00%
Technical Support	37.33%	External	24.00%
Others	9.33%		
Commercial	8.00%	**Gender**	
HR, fiscal/tax, accounting	4.00%	Male	84.00%
		Female	16.00%
Time in the company			
Over 5 years	29.33%	**Time in the job**	
Equal to 1 and less than 2 years	25.33%	Less than 1 year	30.67%
Less than 1 year	22.67%	Equal to 1 and less than 2 years	28.00%
Equal to 2 and less than 5 years	22.67%	Over 5 years	21.33%
		Equal to 2 and less than 5 years	20.00%
Level of education			
Higher education complete	40.00%	**Age**	
High school complete	22.67%	Between 21 and 30	45.33%
Higher education incomplete	21.33%	Between 31 and 40	25.33%
Post-graduation complete	14.67%	Equal or less than 20	24.00%
High school incomplete	1.33%	Between 41 and 50	5.33%

Figure 23 – Respondents' profile
Source: elaborated by the author (2022).

The company that is the object of this study produces customized software and charges monthly fees. As shown in Figure 23, the sectors present in the company are departmentalized in the software factory, which accounts for almost half the personnel, corresponding to 41.33% of the sample. Technical support follows with 37.33%; the other departments are considered as support to those already mentioned. As for the location of the sample, 76% are internal employees, either under the formal labor law regime or under the legal service provider regime. The external public refers to the members of the sales channels, the current form of commercialization. In the current commercial model, sales occur internally through the commercial team, and externally through the sales channels spread over 23 states in Brazil and one district in Paraguay. According to ABES (2021), the sector or function most present in this

company profile is technical support, slightly different from the current sample, in which technical support appears right after the software factory.

The sample still consists of 84% male participants and 16% female, and 45.33% of this sample is between 21 and 30 years old. It is also noticeable that there is a reduced number of respondents aging between 41 to 50, a common pattern in technology-driven companies. This result is compatible with the report presented by ABES (2021), in which 66.70% fall within the 21 to 29 age bracket, which may infer that the young public predominates in this sector.

In relation to time in the company and time in the position, a more uniform distribution of the sample can be seen, with respondents with more than five years in the company (29.33%) and in the position, 21.33%. On the other hand, there is data with less than a year in the company (22.67%) and in the job, 30.67%. Based on this, it can be seen that there is a migration between positions manifesting itself in the course of the respondent's stay in the company.

Finally, as to the level of education, there is a predominance of 61.33% of the sample with higher education completed or in progress. There is the presence of respondents with complete graduate level; on the other hand, there is the presence of participants in the Brazilian Young Apprentice program, a project carried out annually by the company.

Other information that can be analyzed through the respondents is that 21.33% of the sales channels have incomplete higher education or above; as for internal, it corresponds to 54.67% of the sample. When considering the time of company in relation to the level of education, it is noted that employees or sales channels with more than five years, in their entirety, have started higher education, and 17.33% have completed higher education.

6.2 DESCRIPTIVE STATISTICS

To evaluate each variable or dimension of the construct, descriptive statistics was performed through the indicators mean, standard deviation, minimum and maximum, and the survey was applied using a Likert scale of 1 (strongly disagree) to 7 (strongly agree); thus, 4 is the mean. To perform these calculations, Minitab 19 was used; the results are shown in Table 2.

Table 2:
Descriptive statistics

Observable Variables	Mean	Minimum	Maximum	Median	Standard Deviation
HUMAN CAPITAL					
HC1	3.88	1.00	7.00	4.00	1.79
HC2	3.63	1.00	7.00	4.00	1.81
HC3	4.61	1.00	7.00	5.00	1.49
HC4	4.09	1.00	7.00	4.00	1.73
HC5	3.91	1.00	7.00	4.00	1.83
HC6	5.40	1.00	7.00	6.00	1.61
HC7	5.00	3.00	7.00	5.00	1.36
HC8	4.19	1.00	7.00	4.00	1.81
STRUCTURAL CAPITAL					
SC1	4.69	1.00	7.00	5.00	1.54
SC2	5.00	1.00	7.00	6.00	2.05
SC3	4.60	1.00	7.00	5.00	1.89
SC4	5.01	1.00	7.00	5.00	1.66
SC5	4.91	2.00	7.00	5.00	1.61
SC6	5.32	1.00	7.00	5.00	1.31
SC7	5.07	1.00	7.00	5.00	1.61
SC8	4.72	1.00	7.00	5.00	1.62
SC9	4.41	1.00	7.00	5.00	1.97
PSYCHOLOGICAL CAPITAL					
PC1	5.79	1.00	7.00	6.00	1.65
PC2	5.97	3.00	7.00	6.00	1.15
PC3	5.63	1.00	7.00	6.00	1.37
PC4	5.28	1.00	7.00	5.00	1.52
PC5	5.03	1.00	7.00	6.00	1.91
PC6	5.87	2.00	7.00	6.00	1.19
PC7	5.04	1.00	7.00	5.00	1.76
PC8	5.45	1.00	7.00	6.00	1.42
PC9	5.57	1.00	7.00	6.00	1.69
CUSTOMER CAPITAL					
CC1	5.32	3.00	7.00	5.00	1.14
CC2	5.37	1.00	7.00	6.00	1.55
CC3	4.57	1.00	7.00	5.00	2.06
CC4	5.48	1.00	7.00	6.00	1.63
CC5	4.80	1.00	7.00	5.00	1.82
CC6	4.55	1.00	7.00	5.00	1.70
COOPERATION NETWORKS					
CN1	4.36	1.00	7.00	4.00	1.61
CN2	4.69	1.00	7.00	5.00	1.47
CN3	4.56	1.00	7.00	5.00	1.65
CN4	4.71	1.00	7.00	5.00	1.47
CN5	4.17	1.00	7.00	4.00	2.04
CN6	4.95	1.00	7.00	5.00	1.51
CN7	4.00	1.00	7.00	4.00	1.63
CN8	4.51	1.00	7.00	4.00	1.40
CN9	4.15	1.00	7.00	4.00	1.63
CN10	4.47	1.00	7.00	5.00	1.49
CN11	4.47	1.00	7.00	4.00	1.63
CN12	4.35	1.00	7.00	4.00	1.70
COMPETITIVE ADVANTAGE					

OP1	4.73	1.00	7.00	5.00	1.60
OP2	4.31	1.00	7.00	4.00	1.43
OP3	4.63	1.00	7.00	5.00	1.39
OP4	4.60	1.00	7.00	5.00	1.52
OP5	4.33	1.00	7.00	5.00	1.54
OP6	4.59	1.00	7.00	5.00	1.84
OP7	4.69	1.00	7.00	5.00	1.55
OP8	4.23	1.00	7.00	5.00	1.85
OP9	3.48	1.00	7.00	3.00	2.01
OP10	4.61	1.00	7.00	5.00	1.64
OP11	4.75	1.00	7.00	5.00	1.59
OP12	4.39	1.00	7.00	4.00	1.59
OP13	5.07	2.00	7.00	5.00	1.34

Source: elaborated by the author (2022).

According to the sample and the analysis of the averages of the dimensions presented in Table 2, one notices that the company should take actions concerning human capital since it presented the lowest average (3.34). Of the six dimensions evaluated, four were below the average: human capital, structural capital, cooperation networks, and competitive advantage. Based on the answers, it is understood that the company is well positioned regarding customer capital and even more so regarding psychological capital, the highest average with 4.51. An observation concerning this last dimension is that the respondents made a self-evaluation, that is, the answer may have received a positive bias, unlike human capital, which involves the evaluation of the team as a whole, which presented the worst result.

When analyzing individually the dimension related to human capital, presented in Figure 24, it appears that attention should be paid to three variables: "HC1 - When an employee leaves the company, the company has an effective training program for successors compared to competitors," "HC2 - In your understanding, the realization of training for updating skills provided by the company is superior to that of competitors," and "HC5 - The way the recruitment sector acts is better than the competition to find better candidates." These variables presented the worst results in this dimension and all three refer to two subjects that, in most situations, work together: recruitment and training. Within the same dimension, one variable can be highlighted as positive; according to the sample, the freedom for employees and channels to express their opinions is the highest in this dimension. Finally, when considering the items creativity and satisfaction of respondents, these averages were close to the median, so efforts are suggested for these indicators to rise since the path of low or high can be a fine line.
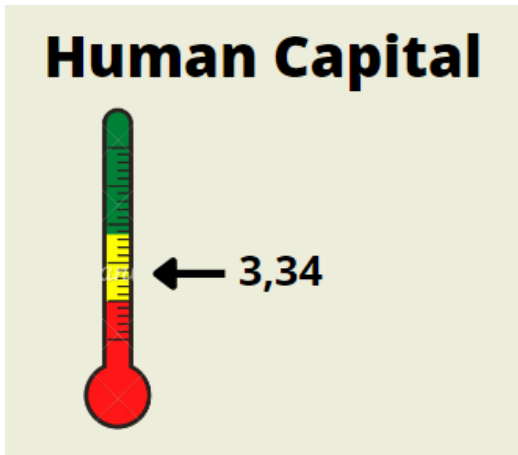
Figure 24 – Mean of human capital variables
Source: elaborated by the author (2022).

In summary, the respondents' answers point out that the company needs to conduct more training with the intent of better qualifying its employees and, thus, to count on more qualified and creative employees. Moreover, a plan for training successors should be instituted which, given the turnover in the information technology sector, has a direct impact on hiring, a variable that the respondents mention as a point for improvement in the way the HR department hires.

According to Figure 25, structural capital presents a more comfortable mean than the previous one, showing results close to the median. As a variable to be highlighted in a positive way is "SC6 - Customer satisfaction with the company," followed by the variables "SC2 - Access to relevant information," "SC4 - Favorable company culture," and "SC7 - Focused objectives" with satisfactory indicators. The variables that need attention are "SC1 - Efficiency," "SC3 - Internal systems with support for innovation," "SC5 - Process improvement," "SC8 - Distribution channels," and "SC9 - Well-defined internal processes," which, according to the sample, present averages close to the median, and may turn negative if the proper actions are not taken.
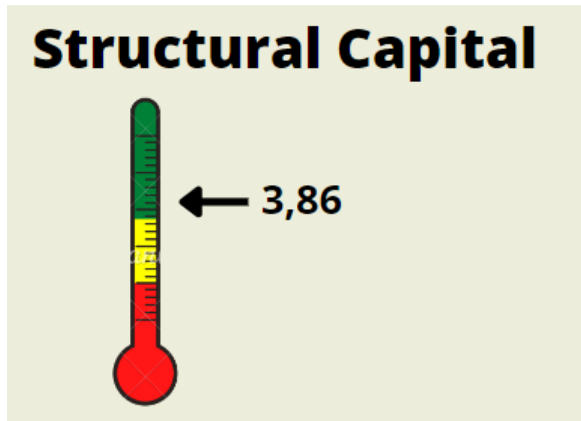
Figure 25 – Mean of structural capital variables
Source: elaborated by the author (2022).

The variable SC6 converges with the strategic objectives of the company, in which "customer centricity" is presented as a source of generating competitive advantage. A point of attention on which the company should focus is the operationalization of the strategy through clear objectives and goals. Based on the responses, it is understood that there are no clear goals and, consequently, the processes are not improved, generating inefficiency, whether internal or caused by interventions and undue prioritization of distribution channels.

The psychological capital dimension, according to Figure 26, presented a mean above the others, which was the only dimension to present all variables above the median. There were highlights for three variables: "PC1 - I feel confident in analyzing a long-term problem to find a solution," "PC2 - I feel confident in representing my team in meetings," and "PC6 - I generally manage difficulties in one way or another during the exercise of my function," which refer to the fact that the respondents consider themselves fit in the cited situations, that is, they evaluate their condition and, therefore, there may be bias. This can be compared to the human capital dimension, which presented the lowest averages, because it is used to verify what the respondent perceives about the team as a whole.

It is noted that the actions suggested in the human capital, such as investment in training to qualify employees, can reflect in improvements in the variables with lower psychological capital averages since, for the respondents, there is some difficulty in understanding the problems, which causes friction and delays in the delivery of demands.
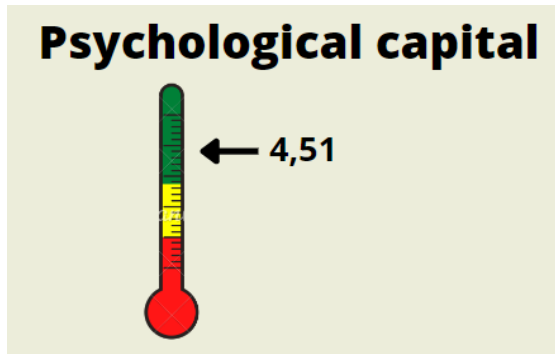
Figure 26 – Mean of psychological capital variables
Source: elaborated by the author (2022).

Given the internal dimensions of intangible assets, customer capital, as per Figure 27, is responsible for presenting all this external process related to the generation of intangible assets. A variable that stands out positively in the company is "CR4 - Innovation practices," i.e., respondents perceive, in the company, practices aimed at the creation and increment of innovative products and, for them, this makes the company differentiated in this aspect. Two other variables, classified as satisfactory, are "CR1 - Strategic alliances" and "CR2 - Customer focus," indicating that the company focuses on the customer through strategic alliances and innovation practices. The variables "CR3 - Internal communication," "CR5 - External dependence" and "CR6 - Partners' decision" are close to the median, which indicates that the company does not have satisfactory internal communication. This corroborates an inadequate decision by the partners and a relevant external dependence for the continuity of the company.

In the last dimension of intangible assets, one notices something complementary to what has already been mentioned in the previous dimensions, about the existence of difficulty in internal communication, which in the operationalization of the partners' decisions. This impact on decisions can be explained by the relevant external dependence on strategic alliances, given the large share in the company's revenues. Finally, the company has difficulty in innovating, a fact that is not only a reality of this company because, historically, it is understood that the older the company is and the more legacy its products leaves, the slower innovation happens. However, this factor cannot be used as an excuse for not innovating; it is recommended here that the company establish a team responsible for analyzing the market and possible expansions with incremental innovations and new products.
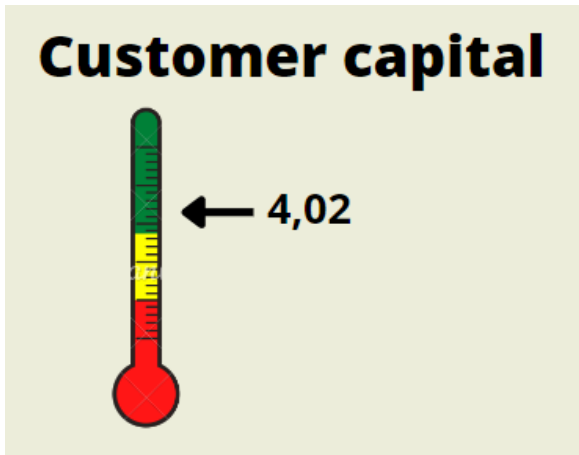
Figure 27 – Mean of customer capital variables
Source: elaborated by the author (2022).

A new dimension presented in this study, an increment from previous studies, brings to light the influence of cooperation networks on the competitive advantage of companies. In the company that is the object of this study, the averages are classified as neutral, as presented in Figure 28. Since, in the dimension of customer capital, the respondents present that the company acts based on strategic alliances, and the cooperation network must be a relevant tool to leverage the company's results, so that this calls for attention in the variables with lower averages. Two variables that presented the lowest averages, "RC5 - Marketing and advertising" and "RC9 - Involvement of the channels in the definition of the processes" stand out; this characterizes that, for the sample, the marketing investments aimed at the cooperation network are not sufficient or effective to achieve the expected results. As for the involvement of the channels, the respondents evaluated that there is little participation of the sales channels in decisions about processes, that is, even though the customer capital presents strategic alliances as sources of competitive advantage, the sales channels, which are responsible for much of the company's revenues, are not invited to participate in these decisions.

As much as the respondents understand that strategic alliances are fundamental for the company's growth, generating external dependence, it was identified that the lack of involvement of the channels in the definition of processes can be a flaw, since it was found that the sharing of information and the joint resolution of problems are tools used by the company to generate intangible assets.
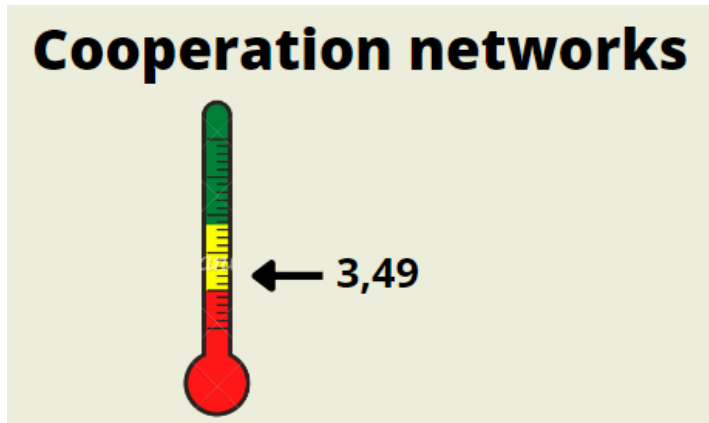
Figure 28 – Mean of variables of the cooperation networks dimension
Source: elaborated by the author (2022).

Finally, the competitive advantage, operationalized by organizational performance and shown in Figure 29, presents an intriguing point. For the respondents, the company has a satisfactory market competitive condition (variable "DO13 - Market competitive condition"); however, all other variables were close to the median, classified as neutral. A point of attention in this dimension is the variable "DO9 - Investment in qualified employees", with the lowest average among all the variables in the study. In view of this, it can be verified that, for the respondents, the company does not invest adequately to have qualified employees and, thus, impacts the generation of human capital; however, on the other hand, individually, the respondents understand that they are efficient, resilient, optimistic and hopeful in the psychological capital dimension.
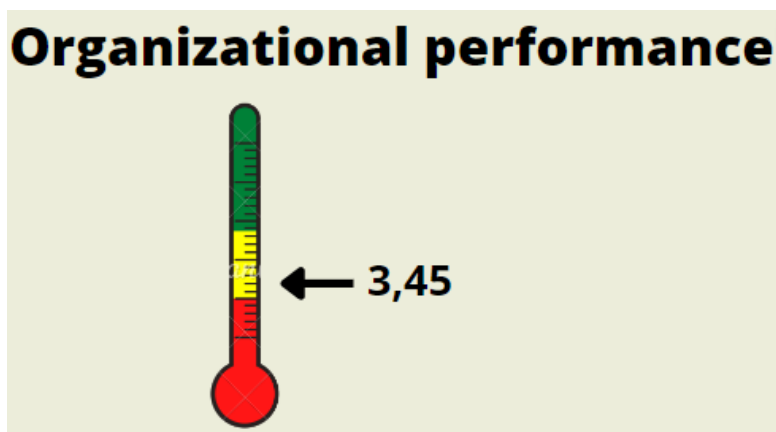
Figure 29 – Classification of Competitive Advantage variables
Source: elaborated by the author (2022).

In summary, the variables with negative emphasis on competitive advantage, operationalized by organizational performance, are linked to those mentioned above. By investing in the qualification and hiring of more capable and creative employees, a more favorable culture and consequent employee satisfaction is generated, optimizing the consumption of resources, improving processes, and presenting a lean cost structure. It is understood that, once these adjustments are made, it would be possible to have customer satisfaction, besides being able to create new business and make the company more profitable.

In order to analyze each dimension, the mean of the respective variables was performed. The results found were compared with studies already conducted by Bontis (1998), Sofian, Tayles, and Pike (2004), Salleh and Selamat (2007), Sharabati, Joward, and Bontis (2010), and Peinado (2016), as shown in Table 3.

Table 3:
Comparison of means with the supporting studies

Dimensions	This study (2022) Brazil	Peinado (2016) Brazil	Bontis (1998) Canada	Sofian, Tayles and Pike (2004) Malasia	Salleh e Selamat (2007) Malasia	Sharabati, Joward, and Bontis (2010) Jordan
Human capital	3.338	4.000	4.020	5.510	5.194	4.802
Structural capital	3.859	3.940	4.080	5.010	5.068	4.284
Customer capital	4.016	4.430	4.180	5.450	5.362	4.830
Psychological capital	4.514					
Cooperation networks	3.492					
Performance	3.448	4.210	6.520	4.480		4.844

Source: elaborated by the author (2022).

Given the above, the dimension with the lowest average is human capital, corroborating what has already been presented individually in the variables, and the dimension with the highest average was the psychological capital. The results of the means related to human capital corroborate the study of Peinado (2016), below the median, which is different from previous studies that present averages above the median. However, unlike the study of Peinado (2016), the structural capital also presented means below 4. Finally, it is up to the company to build an action plan for alignments of the critical points presented through this instrument.
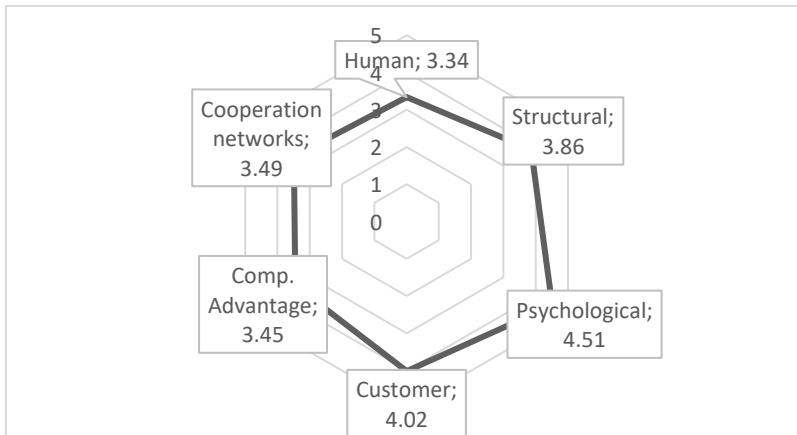
Figure 30 – Means per dimension
Source: elaborated by the author (2022).

It can be noted that there are elements shared between the dimensions, such as investment in qualified employees, an element present in human capital, in which the respondents mention the relevance of there being investment in training and optimization in the recruitment and selection process, culminating in the institution of a succession program. It is understood that the company has a relevant customer satisfaction, which contributes to a favorable culture within the company. However, it is necessary to define more defined objectives and goals, such as the optimization and definition of internal processes in an impartial way, and if there is influence in the commercial of the distribution channels about these processes and the prioritization of demands.

Figure 30 verifies the relationship between the means, in which human capital presents variables with more critical points to be worked on, a fact that reflects on the cooperation networks and, consequently, on the competitive advantage. However, even with all the influence of the COVID-19 pandemic and the war between Russia and Ukraine, there is generation of intangible assets in the company through the psychological capital, of which it is worth mentioning the definition present in the study by Tefera and Hunsaker (2021a), in which the psychological capital is more what the individual is than what he knows.

Given the evaluation of the dimensions in an isolated and consolidated way, building the structural equation modeling was necessary, which is presented below.

6.3   APPLICATION OF STRUCTURAL EQUATION MODELING

After presenting the data related to the respondents' profile and classifying the variables with the purpose of verifying which points the company stands out and also the points of attention related to situations in which the company is not in a favorable condition, the data was analyzed by means of structural equation modeling (SEM), based on the PLS technique, using the SmartPLS 3 software.

Considering that the present model is applied by means of first-, second-, and third-order variables, the presentation was defined in stages. The verification of the psychological capital, the model based on the previous national studies, the intangible assets, the cooperation networks, and finally the model suggested in this study are presented.

To begin the analysis, a sample of 75 observations, 7 latent variables, and 77 observable variables was used; the reduced observable variables were 57. In view of the feedback collected in the pre-test application, they were divided into 12 first-order dimensions (Human capital, Structural capital, Customer capital, Efficacy, Hope, Resilience, Optimism, Costs and risks, Information sharing, Power and competitiveness, and Joint problem solving), 2 second-order dimensions (Psychological capital and Cooperation networks), and 1 third-order dimension (Intangible assets and Organizational performance). For the adequacy of the measurement model, factor validity was performed, so that variables with factor loadings lower than 0.6 were removed. While Hair, Gabriel, and Patel (2014) suggest removing variables with factor loadings lower than 0.7, Chin (1997) recommends removing variables with factor loadings lower than 0.5. Thus, 39 observable variables remained. The variables that remained and their factor loadings are shown in Table 4.

Table 4:
Factorial loadings by observable variable

OBSERVABLE VARIABLE	FACTOR LOAD	VARIABLE	FACTOR LOAD
INTANGIBLE ASSET		**COOPERATION NETWORKS**	
HUMAN CAPITAL		CN1	0.694
HC3	0.742	CN3	0.812
HC4	0.818	CN4	0.652
HC5	0.804	CN6	0.761
HC7	0.738	CN8	0.755
STRUCTURAL CAPITAL		CN9	0.879
SC1	0.734	CN10	0.896
SC2	0.799	CN11	0.884
SC3	0.802	CN12	0.856
SC4	0.813	**ORGANIZATIONAL PERFORMANCE**	

SC5	0.859	OP1		0.744
SC6	0.662	OP2		0.669
SC7	0.813	OP3		0.819
SC8	0.751	OP4		0.743
PSYCHOLOGICAL CAPITAL		DO5		0.896
PC1	0.919	OP6		0.694
PC6	0.923	OP7		0.745
CUSTOMER CAPITAL		DO8		0.761
CC2	0.745	OP9		0.798
CC3	0.878	OP10		0.631
CC5	0.747	OP12		0.808
CC6	0.859	OP13		0.808

Source: elaborated by the author (2022).

When performing the classification of the observable variables, two of the four dimensions of psychological capital were removed; the dimensions Optimism and Resilience did not present factor loadings within the proposed minimum values. The analysis of long-term problem solving, representing teams in meetings, contributing to discussions, setting and achieving goals, creativity in problem situations, persistence in objectives, and the feeling of success were no longer assessed. As for the other dimensions, employee satisfaction, manager credibility, product diversity, and the business partners' knowledge about the company's objectives show themselves as highlights. Also, the successor training program, cooperation in team tasks, and that employees always perform their best are not analyzed.

6.4 EVALUATION OF THE MEASUREMENT MODEL

In assessing the quality of the measurement model, discriminant validity, VIF, average variance extracted (AVE), Cronbach's Alpha, and composite reliability were used. The last three are presented in Table 5.

Table 5:
Reliability and dimension validity

DIMENSION	AVE	COMPOSITE RELIABILITY	CRONBACH'S ALPHA
Structural capital	0.610	0.926	0.908
Human capital	0.743	0.896	0.826
Customer capital	0.656	0.883	0.823
Psychological capital	0.848	0.918	0.821
Cooperation networks	0.645	0.942	0.929
Organizational Performance	0.582	0.943	0.934

Source: elaborated by the author (2022).

The AVE is the convergent validity and has as satisfactory result value greater than 0.5, i.e., according to Table 4, all categories were above the satisfactory result. The Cronbach's alpha indicator and the Composite Reliability have, respectively, the minimum appropriate values of 0.6 to 0.7 and 0.7 to 0.9. Therefore, it can be said that the research data are reliable since both were above 0.9 (Hair, Gabriel & Patel, 2014).

The VIF (collinearity) results are satisfactory for SmartPLS when they are below 10; therefore, according to Table 6, all are below (Hair, Gabriel & Patel, 2014).

For the analysis of discriminant validity, Gaski and Nevin's (1985) criterion served to compare the composite reliability of each construct with the correlations between the other constructs. The results are satisfactory if the reliability is higher than the correlations. As shown in Table 7, the results of this study for discriminant validity are satisfactory.

Table 6:
Collinearity Analysis

	IA	SC	HC	PC	CC	Info Sharing	Costs and Risks	OP	Efficacy	Power	Cooperation networks	Joint Problem Res.	Resilience
Intangible Asset								2.631			2.716		
Structural capital	4.142												
Human capital	2.520												
Psychological capital	1.622												
Customer capital	3.341												
Information Sharing											5.549		
Costs and Risks											2.652		
Organizational Performance													
Efficacy				1.940									
Power													
Cooperation Networks											1.970		
Joint Problem Resolution								2.631					
Resilience				1.940							6.423		

Source: elaborated by the author (2022).

Table 7:
Discriminant validity

	IA	SC	HC	PC	CC	Info Sharing	Costs and Risks	Organizational Performance	Efficacy	Power	Cooperation networks	Joint Problem Res.	Resilience
Intangible Asset	0.708												
Structural capital	0.965	0.781											
Human capital	0.834	0.770											
Psychological capital	0.634	0.529	0.353	0.921									
Customer capital	0.903	0.807	0.654	0.606	0.810								
Information Sharing	0.712	0.702	0.479	0.378	0.721	0.862							
Costs and Risks	0.707	0.689	0.577	0.333	0.679	0.737	0.904						
Organizational Performance	0.798	0.753	0.635	0.443	0.805	0.657	0.784	0.763					
Efficacy	0.561	0.485	0.272	0.919	0.524	0.285	0.222	0.340	1.000				
Power	0.588	0.538	0.373	0.526	0.603	0.675	0.575	0.636	0.404	1.000			
Cooperation Networks	0.787	0.760	0.579	0.463	0.776	0.951	0.864	0.786	0.344	0.761	0.803		
Joint Problem Resolution	0.766	0.731	0.583	0.485	0.743	0.896	0.750	0.740	0.371	0.676	0.956	0.856	
Resilience	0.607	0.488	0.377	0.923	0.590	0.409	0.389	0.474	0.696	0.562	0.506	0.521	1.000

Source: elaborated by the author (2022).

The analysis of these indicators suggests that the quality of the measurement model is adequate, enabling the analysis of the structural model of this study.

6.5 STRUCTURAL MODEL

The structural model analysis was carried out by means of the PLS Algorithm calculation and bootstrapping (non-parametric calculations in resampling technique); hence, there is the explanatory power (R^2) and path coefficients. In order to demonstrate the evolution of the models proposed in previous studies, including the suggestions proposed in the studies by Luthans *et al*. (2007), Malone (2008), Thalamo (2008), Tatsch (2010), and Tefera and Hunsaker (2021a) and (2021b), the logical sequence presented below was built.

Initially, the base model is presented, here called classic; in the sequence, the structural model suggested by Peinado (2016) is assessed. Separately, the model proposed by Tefera and Hunsaker (2021a) is applied, including it in the sequence to the previous model. Finally, cooperation networks, applied in isolation on performance, are brought to the analysis; then, the model proposed in this study is reached.

The classic model (Bontis, 1998) was applied without the use of interactions between the intangible asset dimensions, assessing the contribution of each construct to performance. Figure 31 shows the first model to be presented.
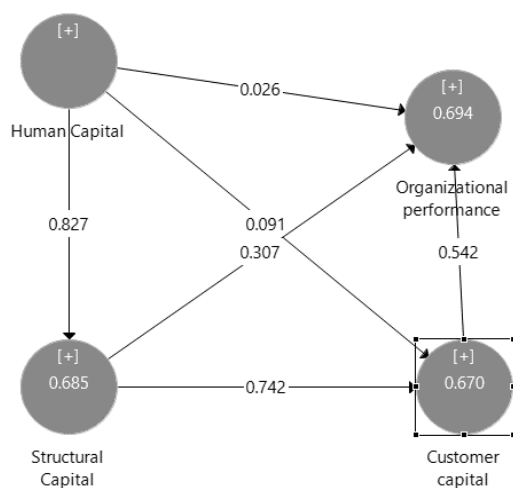
Figura 31 – Bontis Model (1998)
Source: Bontis (1998).

Based on the model by Bontis (1998), the explanatory power of the structural model has, in its dependent variable, the organizational performance with a value of 69.4%, just below

the 75% considered as substantial by Hair, Gabriel, and Patel (2014). R^2 presented values higher than what these authors consider as moderate (50%), being 68.5% for structural capital and 67% for customer capital. For the purpose of comparison with previous studies, Table 8 was prepared, in which performance presented explanatory power lower than that of Peinado (2016); however, for the dimensions of structural and customer capital, it is higher than previous studies.

Table 8:
Comparison of R^2 with previous studies

DIMENSION	This study (2022)	Bontis (1998)	Bontis *et al.* (2000)	Sharabati *et al.* (2010)	Mention and Bontis (2013)	Peinado (2016)
	Brazil	Canada	Malasia	Jordan	Belgium	Brazil
	IT	MBA students	Industry	Pharma Ind.	Banks	Pharma Ind.
Human cap.				41.9%		
Structural cap.	68.5%	24.9%		30.9%	40.1%	58.5%
Customer cap.	67.0%	24.5%		45.0%	48.6%	60.8%
Performance	69.4%	56.0%	37.1%	51.7%	33.4%	72.4%

Source: elaborated by the author (2022)

Given this first model presented, the criteria evaluated for the purpose of hypothesis validation, the path coefficient, and p-value analysis proposed by Hair, Gabriel and Patel (2014) are introduced:

a. Direct or indirect: path coefficient evaluation and indirect effect;
b. Positive or negative: evaluation of the sign of the path coefficient;
c. Strong or weak: evaluation of the value of the path coefficient, strong if close to -1 or +1, and weak if close to zero;
d. Significant or not significant: in the bootstrapping technique if p-value < 0.05, the effect is significant; otherwise, it is not significant.

Given the way the hypotheses will be evaluated, Figure 32 presents the second model, plus the interactions suggested by Peinado (2016).
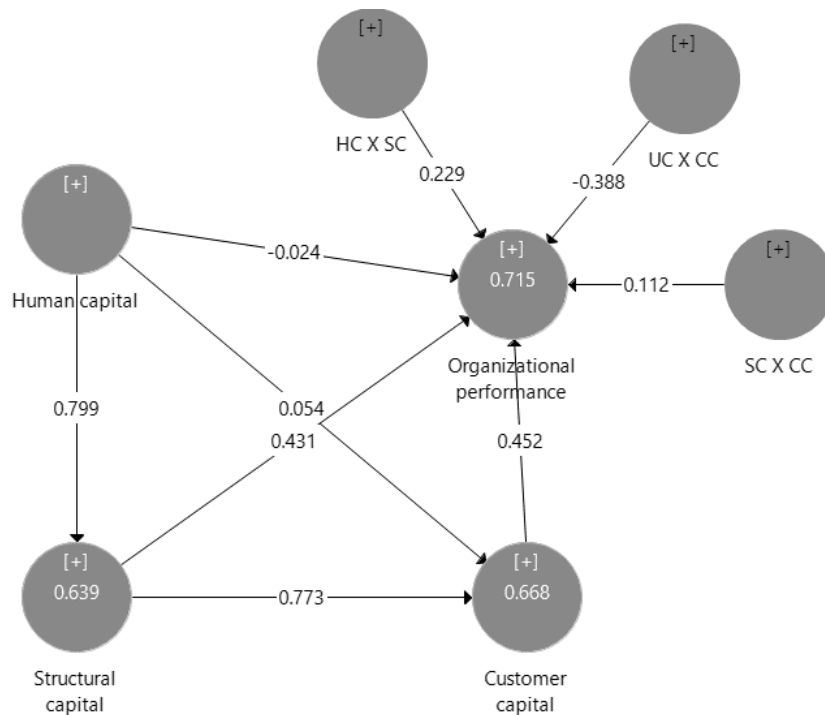
Figure 32 – Intangible Asset Model with Interactions
Source: Peinado (2016).

Following the chronology of the models according to the model of Peinado (2016), it is verified that the explanatory power of the organizational performance obtained slight growth, reaching 71.50%, so that it presented reduction in the explanatory power of the structural capital by 4.60% and, in the customer capital, of 0.002%. Regarding moderations, human capital x structural capital and structural capital with customer capital present a positive, weak, and non-significant path coefficient, and human capital with customer capital presents a negative, weak, and non-significant path coefficient. Also, in comparison to the previous model, one notices the inversion of the sign of the path coefficient that links Human Capital with Organizational Performance; it presents a negative, weak, and significant coefficient. In view of this, the moderations were excluded from the model, given their non-significance for the proposed model.

Tefera and Hunsaker (2021a) present a dimension within Intangible Assets little used in the national literature, the Psychological capital. Figure 33 presents the application of the proposed model, verifying the impact of this new dimension in isolation on organizational performance.
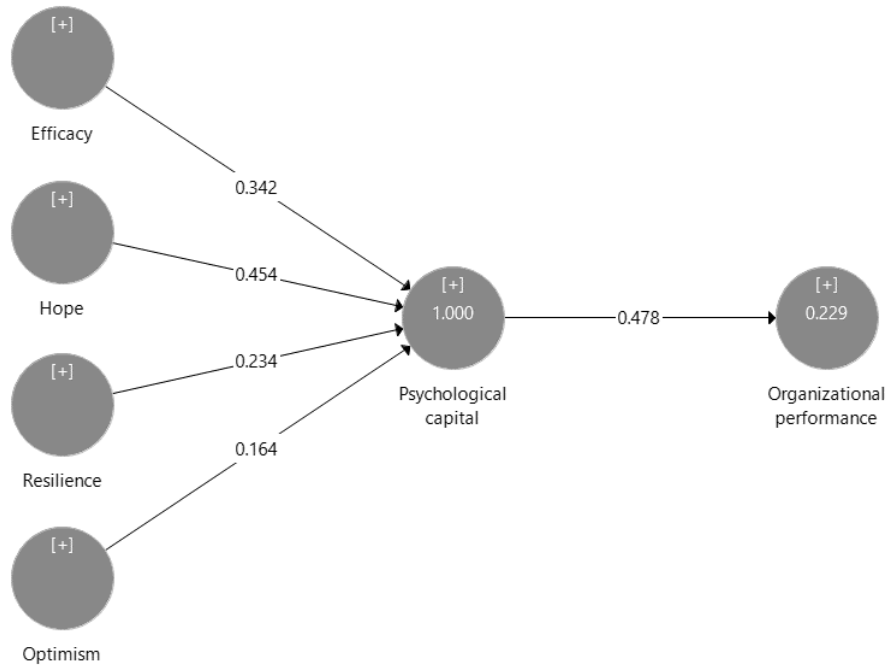
Figure 33 – Tefera and Hunsaker's Model 1
Source: Tefera and Hunsaker (2021a).

When evaluating psychological capital in isolation on competitive advantage, operationalized here by organizational performance, it is observed that the explanatory power is 22.9%, with a positive, weak, and significant direct path coefficient (0.478), considering that all dimensions (efficacy, hope, resilience, and optimism) of psychological capital presented significant p-value.

Given that the model, here called classic, prevailed over the model with interactions of Peinado (2016) and that the model of Tefera and Hunsaker (2021a) was significant, the third model is presented (Figure 34) in which the classic model (Bontis, 1998) is constructed, added of the psychological capital dimension.
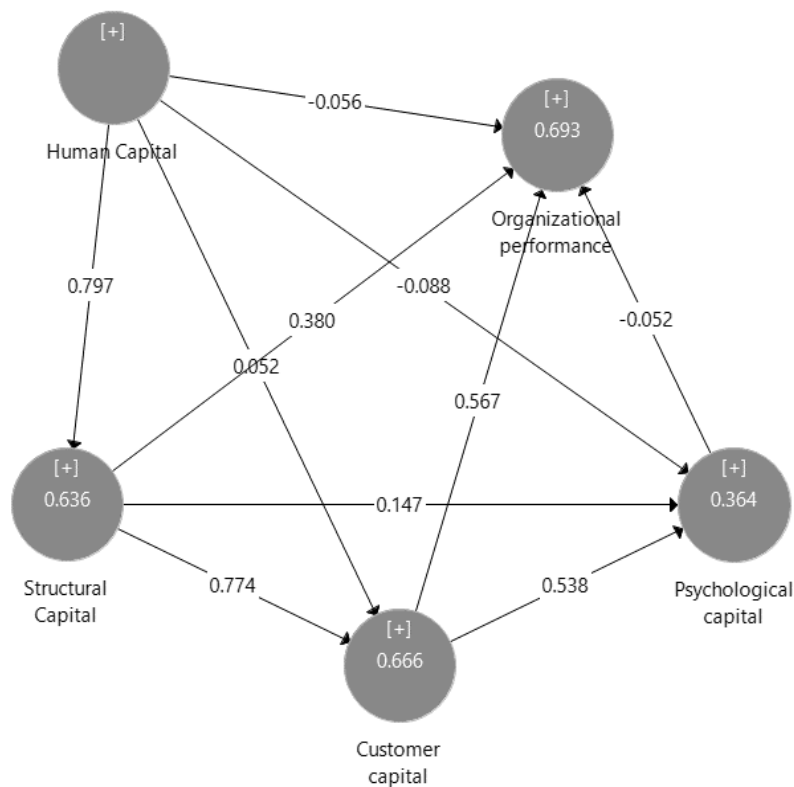
Figure 34 – Bontis's model with the addition of psychological capital
Source: elaborated by the author (2022).

The explanatory power of the organizational performance presents a reduction of 0.10% in relation to the model of Bontis (1998), a fact that can be explained by the impact of the COVID-19 pandemic on the psychological capital. Moreover, it presents the R^2 of 63.60% for Structural Capital, 66.60% for Customer Capital, and 36.40% for Psychological Capital. Taking into account the path coefficients of customer capital for both psychological capital and organizational performance, they were significant; psychological capital was not significant for organizational performance, same result as human capital for customer, psychological capital and organizational performance. Human capital has significant path coefficient with structural capital, which has significant coefficient with customer capital and organizational performance. Finally, structural capital has no significant path coefficient with psychological capital. In other words, it is verified that, for the respondents, there is a greater presence of intangible asset generation due to the infrastructure made available. Moreover, the psychological capital may have been affected not only by the pandemic, but by the internal perception of lack of training, training of successors, and qualified employees to perform the function.

Still in 2021, Tefera and Hunsaker (2021b) present a structural equation model with an evolution of the previous model, adding the dimensions Human Capital, Structural Capital, and

Customer Capital, together with the Psychological Capital already present. Finally, they work with first, second, and third order variables. However, it is noted that the factorial loadings of Psychological Capital are below 0.6, being removed from the final model, unlike the mentioned study, in which these variables presented acceptable factorial loadings. However, all coefficients were significant, presenting explanatory power of 63.80% with a positive, strong and significant path coefficient of 0.799 of intangible assets on organizational performance, as shown in Figure 35.
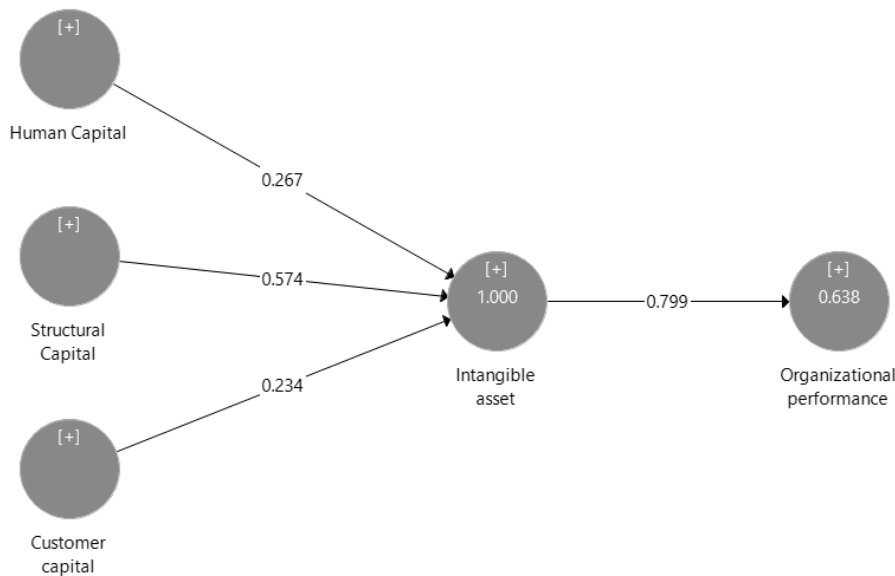
Figure 35 – Intangible Asset Model on Performance
Source: elaborated by the author (2022).

In conjunction with psychological capital, this study presents a set of dimensions for measuring the explanatory power of organizational performance, as a second-order variable to the Cooperation Network, represented by the dimensions Costs and Risks, Information Sharing, Power and Competitiveness, and Joint Problem Solving.
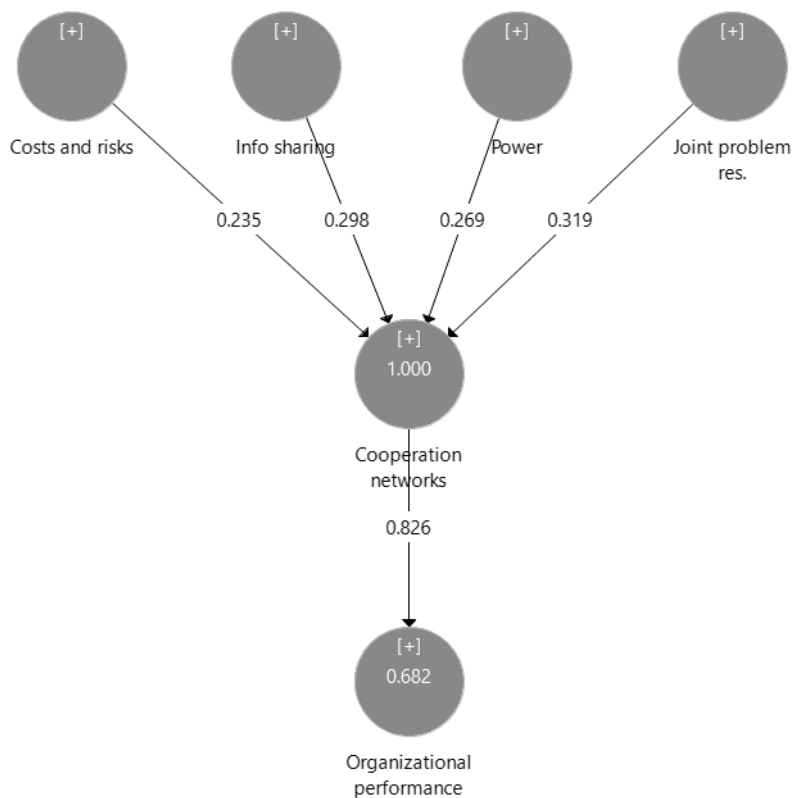
Figure 36 – Model of the influence of cooperation networks on performance
Source: elaborated by the author (2022).

Similarly to isolating psychological capital to ascertain the explanatory power on performance, we chose to apply the model of Cooperation Networks on Organizational Performance, presented in Figure 36.

With a positive, strong, and significant path coefficient, the explanatory power of cooperation networks on organizational performance was 68.2% with a positive, strong, and significant path coefficient of 0.826.

Having presented all the logical sequence for the construction of the model of evaluation of intangible assets and cooperation networks with organizational performance, we arrive at the final model proposed in this study. When verifying the factorial loadings of the 39 observable variables, one notices that there are variables with a factor loading lower than 0.600, tolerable in this study. For model adequacy, it is verified the need for exclusion of two of the four dimensions of psychological capital, persistence and optimism; this fact may be a reflection of the COVID-19 pandemic in people's psychological. Silva *et al*. (2022) present that the current context of the pandemic has impacted people's mental health, intensifying possible panic crises, causing social isolation, and altering people's optimism regarding the achievement of personal and professional goals. Given the above, it is verified that, directly or indirectly, the pandemic

has impacted the psychological capital, consequently, the generation of intangible assets and the performance of companies; that is, the non-significance of these dimensions as generators of intangible assets may be a reflection of this, a fact that can be validated in the post-pandemic to confirm or refute this proposition.

The model proposed in this study, represented in Figure 18, uses the mediation of cooperation networks in the generation of intangible assets and its consequent influence on competitive advantage operationalized by organizational performance. It is noted that such mediation has a smaller impact on competitive advantage than when treated jointly. Figure 37 shows the final model of this study, with explanatory power of 70.20%.
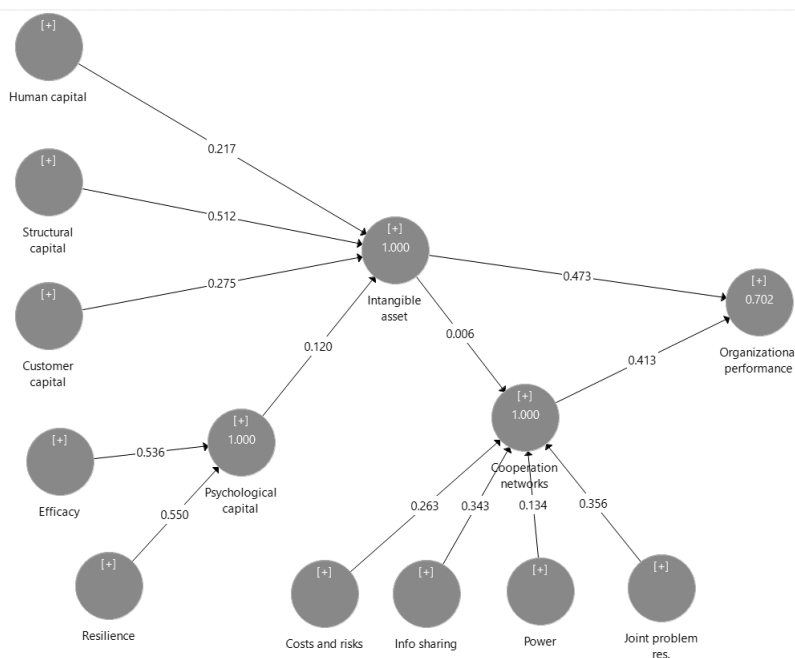
Figure 37 – Proposed model
Source: elaborated by the author (2022).

The path coefficient on Intangible Assets is positive and significant (0.473), and on Cooperation Networks it is positive and significant (0.413). The evaluation of the hypotheses by the criterion of p-value <0.10 is summarized in Table 9.

Table 9:
Hypothesis evaluation

Paths	Hypos.	Coefficient	p-value	Sig.	Result
Efficacy > Psychological capital	H1a	0.536	0.000	Yes*	Accept
Hope > Psychological capital	H1b	**0.000**	0.000	No	Reject
Resilience > Psychological capital	H1c	0.550	0.000	Yes*	Accept
Optimism > Psychological capital	H1d	**0.000**	0.000	No	Reject
Human capital > Intangible assets	H2a	0.217	0.000	Yes*	Accept

Structural Capital > Intangible Assets	H2b	0.512	0.000	Yes*	Accept
Customer capital > Intangible assets	H2c	0.275	0.000	Yes*	Accept
Psychological capital > Intangible assets	H2d	0.120	0.000	Yes*	Accept
Power > Cooperation networks	H3a	0.134	0.000	Yes*	Accept
Joint problem solving > Cooperation networks	H3b	0.356	0.000	Yes*	Accept
Information Sharing > Cooperation Networks	H3c	0.343	0.000	Yes*	Accept
Costs and Risks > Cooperation Networks	H3d	0.263	0.000	Yes*	Accept
Intangible Asset > Competitive Advantage	H4	0.473	0.000	Yes*	Accept
Intangible Asset > Networks > Competitive Advantage (Direct)	H5	0.413	0.000	Yes**	Accept
Intangible Asset > Networks > Competitive Advantage (Indirect)	H5	0.886	0.000	Yes**	Accept

Note: * significant at 0,001, ** significant at 0,010

Source: elaborated by the author (2022).

Given the decomposition of Hypothesis H1 into four, in order to analyze in isolation the ability to generate intangible assets by the psychological capital, it is noted that, in relation to the studies of Tefera and Hunsaker (2021a) and Tefera and Hunsaker (2021b), the present study also showed composite reliability higher than 0.7. The difference is effective in the significance of two of the four dimensions; the dimensions hope and optimism did not show significance, a fact that can be partially answered by the impact of the pandemic on the psychological makeup of individuals. Finally, there is an evolution in the explanatory power of the model, which in the previous study presented 13.50% and now presents 22.90%, with an improvement in the path coefficient.

When increasing the Psychological Capital dimension, hypothesis H2d, one verifies if psychological capital is capable of generating significant intangible assets, capable of generating competitive advantage for the company. By adapting the Bontis (1998) model, adding the psychological capital dimension, it is possible to verify that the explanatory power had a slight reduction, from 69.40% to 69.30%, a fact that may have influenced the lack or reduction of intangible asset generation due to the unfavorable economic context and the COVID-19 pandemic. It is verified that there was a loss in the generation of competitive advantage due to psychological capital and human capital, being the structural and customer capital responsible for the generation of competitive advantage.

In conjunction with the psychological capital, one of the differentials of this study is the addition of cooperation networks as a source of competitive advantage generation for the company. In view of the above, when analyzing the dimensions of the cooperation networks, it is possible to identify that there is generation of competitive advantage in an isolated way. When applying the model of the dimensions of the cooperation networks, with the application of second order variables, HOC, presented an explanatory power of the organizational

performance in 68.20%. It can be verified that the results match the company's reality, in which the sharing of information and the joint resolution of problems are more present, since the costs and risks are normally centralized in the company and there is little influence of power and competitiveness. Finally, it can be verified that the unfoldings of hypothesis H3 were significant, thus demonstrating that companies that use distribution channels or by franchising their operations can benefit from these relationships to generate competitive advantage.

When applying the model proposed in this study, it is verified that the intangible asset mediated by the cooperation networks is capable of generating competitive advantage. However, during the modeling process, it was possible to identify that by joining them into a single dimension, through the HOC, it was possible to identify a greater explanatory power and with an even stronger path coefficient than the original model. Hence, this new model stands out for being able to generate more robust results. In Appendix B, identified here as Cooperative Intangible Assets, a new front can be opened to analyze whether cooperation networks and intangible assets are able to generate influence on social capital.

In Table 9, the dimensions Hope and Optimism of the Psychological Capital construct are highlighted; these dimensions had, in their observable variables, unsatisfactory factorial loadings, so they were removed from the model and, consequently, were considered without significance in the hypothesis validation, a fact justified by the internal context of lack of clear objectives and goals, talent retention, and employee training, and externally by the context of interference from distribution channels and COVID-19, which negatively affected the generation of psychological capital within the companies.

To compare the results of this study, it is necessary to exercise it in stages, given the addition of new dimensions to the final model. In relation to intangible assets before the addition of psychological capital, in the analysis of the results presented with previous studies, it is noted an increase in the R^2 of the structural and customer capitals, an increase of 10% in the structural capital in relation to the highest previous result, of Peinado (2016). For customer capital, an increase of 6.20% was obtained over the same previous study, a result already higher than the other previous studies. In view of this, a reduction in organizational performance was obtained, of 3% over the result of Peinado's (2016) study, but higher than the studies of Bontis (1998), Bontis *et al*. (2000), Sharabati *et al*. (2010) and Mention and Bontis (2013). Finally, a point to be highlighted is the non-significance of the interactions implemented by Peinado (2016) in the model, here, called classic, initiated by Bontis (1998).

When analyzing psychological capital in isolation, there is an increase in the explanatory power of organizational performance, from 13.50%, of Tefera and Hunsaker (2021a), to 22.90% in this study. Meanwhile, the path coefficients remained positive; in efficacy, there was a variation from 0.336 to 0.342; hope from 0.378 to 0.454; resilience from 0.241 to 0.234; and optimism from 0.224 to 0.164. In other words, the first two dimensions grew, while the last two were reduced, a fact that can be justified by the pessimism generated by the COVID-19 pandemic, among other factors previously presented. Resilience is understood as the ability to adapt to change, a characteristic that combines with hope to be able to adapt. Since 2019, with the worsening of the pandemic state, generating social isolation, consequently inflationary increase and reduction in purchasing power, the pessimism regarding the achievement of goals ends up directly impacting the ability of companies to generate intangible assets.

When removing the interactions between the dimensions of intangible assets, proposed by Peinado (2016) and presented in Figure 32, and the addition of psychological capital, proposed by Tefera and Hunsaker (2021b), according to Figure34, it is verified that the explanatory power of competitive advantage, operationalized here by organizational performance, presented 69.30% and that Human Capital and Psychological Capital showed negative coefficients in relation to performance. The R^2 values were 63.6% for structural capital; 66.66% for customer capital; and 36.40% for psychological capital. It can be seen that, when applying the original model proposed by Tefera and Hunsaker (2021b), present in Figure 37, the Hope and Optimism dimensions of psychological capital did not show significance, being removed from the model.

Together with the psychological capital, the addition of the cooperation networks in the construction of the conceptual model completes the differential proposed by this study and, because of this, it was decided to apply a previous model, taking into account the dimensions of the cooperation networks (costs and risks, information sharing, power and competitiveness and joint problem solving) on the performance, since it was also analyzed, in an isolated way, the dimensions of the intangible assets on the organizational performance. The explanatory power of 70.20% of the cooperation networks on performance was obtained, with a positive and significant path coefficient.

Finally, the final model proposed in this study is presented in Figure 37, using the variable of higher order. First, the dimensions of psychological capital are verified, in first order; next, the three dimensions of intangible assets, widely used in the literature (structural,

customer, and human), were calculated, with the addition of this second-order variable psychological capital. Separately, the interactions of the dimensions and their effect on the cooperation networks are verified so that it is possible to verify the influence of the intangible asset, moderated by the cooperation networks on organizational performance.

The explanatory power of organizational performance in this scenario was 70.20%, with a positive and significant path coefficient, in which intangible assets presented 0.473 and cooperation networks 0.413. According to Bido and Silva (2019), mediation is divided into partial and total mediation. When the direct effect has no significance and the indirect effect does, it is classified as total; if both have significance, it is classified as partial. When evaluating mediation, it is noted that there is significance in the direct effect and in the indirect effect, which characterizes partial mediation.

The results can be complemented with Figure 38, which relates the total effects (intangible assets and cooperation networks) with competitive advantage (operationalized by organizational performance). Intangible assets, followed by cooperation networks and the structural capital dimension, stand out from the others; in other words, it is perceived that the cooperation networks are able to generate competitive advantage, in the same way that the intangible assets, mainly by the structure provided by the company through the dimension of structural capital.
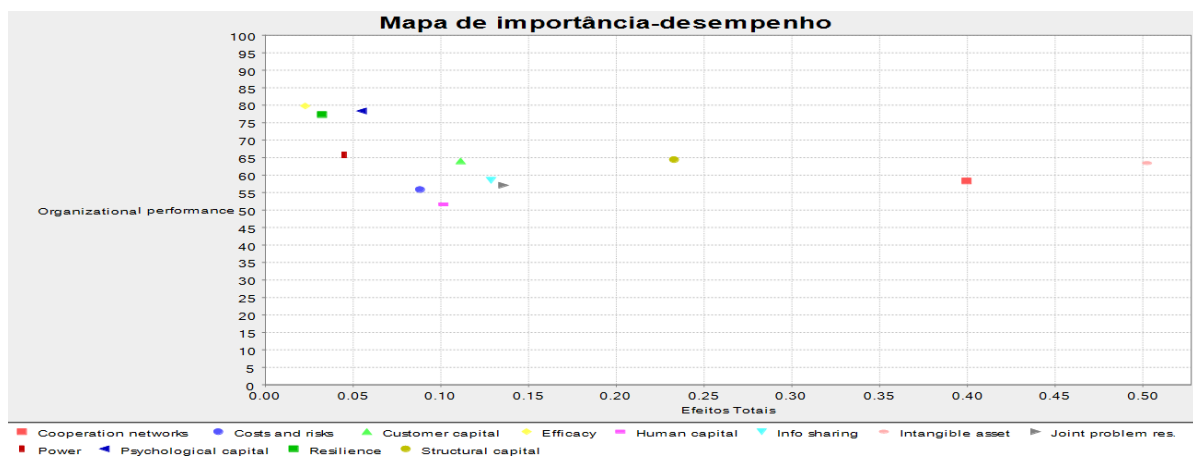
Figure 38 – Performance-importance map
Source: elaborated by the author (2022).

From the descriptive analysis, conducted in the previous section, there are several points of development through which the company should pass to improve these indicators. When bringing this to the structural equation modeling, it is shown that human capital and psychological capital affect performance and that they presented opposite paths for the

respondents, while when evaluating human capital, i.e., the opinion of this one on third parties, it is noted points for improvement, including with the observable variables with the worst averages. In contrast to this, the psychological capital, when analyzing the respondents individually, does not show problems, which suggests that the respondent notices the problem in the management of human capital in the company but cannot see if he or she is part of the cause of these problems.

With the possible cooling of the effects of the pandemic, facts that are already noticeable in micro and macroeconomic context, improvements in the indicators of the dimensions of psychological capital can be considered. However, with the declaration of war between Russia and Ukraine, there are economic and supply reflexes indefinitely, influencing this scenario of improvement. In view of the above, the need to remove the Hope and Optimism dimensions from the psychological capital stands out; such action suggests that, due to the lack of persistence and pessimism on the part of respondents, this reflects in a human capital with low averages. However, this does not manifest itself in the structural and customer capital, with higher averages, suggesting that the company has a structure and a network of strategic alliances, capable of boosting the company's long-term result. Once the respondents' profile, descriptive statistics, and the application of structural equation modeling have been presented separately, increasing until reaching the final model, we move on to the section that presents the practical contributions for the company that is the object of this study.

7   PRACTICAL CONTRIBUTIONS

The evaluation of physical assets can be considered hard work in many situations; therefore, the evaluation of the construction of intangible assets within a segment company, which demands significantly intangible assets, can be more complex. Therefore, applying an analysis of this by means of a technical opinion is necessary to evaluate whether or not the company is following a direction of continuity and growth.

To understand what can be considered a contribution to the company, it is necessary to present its mission, vision, and values. The company that is the object of this study has as its mission the motto "Innovate every day, making our products more practical and efficient day by day, anticipating the future for today's reality within companies", i.e., for it, innovating, especially incrementally, is a growth strategy. In relation to its vision, "To be among the main software companies in the country by 2025, standing out in the fields it operates, being recognized for the expertise of its products and the professionalism of its employees", it refers that the economic and financial growth is among the company's goals. This would take place through the optimization of its product portfolio, generating the need to train its team to be efficient, creative, and innovative.

After presenting the key elements that the company aims for and has as a premise, it is necessary to highlight the first findings present in the previous section. It is necessary to have a team capable of evaluating, at the same time, the growth of products already established in the market, such as generating efforts to solve communication problems, instituting optimized processes, organizing training routines, and optimizing hiring management.

A company in the information technology area invests a large part of its revenue with personnel, the company's largest source of cost and of utmost importance to the continuity of operations; qualified personnel with growth potential are able to create, innovate, and maintain products in a more agile manner. With this, a competitive differential and future economic benefits are generated, a requirement for considering it initially as an intangible asset. It is important to have a relationship with business partners, either in the commercialization of products, or in increasing the portfolio of solutions with strategic allies, which complements the potential for revenue generation and, consequently, promotes economic growth. A robust infrastructure allows comfortable and suitable environments for the performance of activities, together with a recruitment and selection sector capable of identifying individual capabilities; thus, it is possible to measure the potential of psychological capital. Finally, in face of all that

has been demonstrated, it is only possible to consider an intangible asset as such when it can be persisted, i.e., when it leaves people's heads and becomes processes, products, and other ways to draw from the individual the potential to generate future economic benefits.

Given the above, collecting the perception of the company's internal team, such as partners and strategic alliances, may be able to operationalize a periodic and systematic routine to measure this evolution over time. In this research, the classic and widely considered dimensions for measuring intangible assets (human, structural and customer) are used, adding a new dimension that, according to international literature, can be considered a competitive differential, including a way of doing business in the information technology area, from a cooperation network. From the result captured with the research instrument, it was possible to verify observable variables with potential problems and competitive differentials.
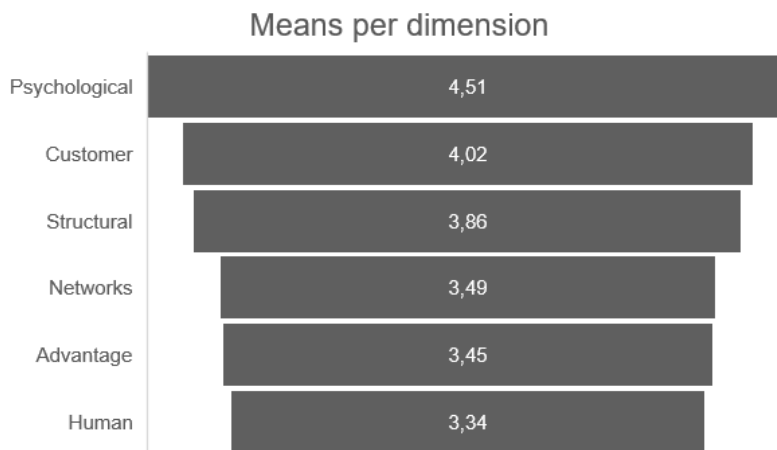
Figure 39 – Means per dimension
Source: elaborated by the author (2022).

Figure 39 presents the means per dimension, with the purpose of evaluating which dimensions the company has as a strong point, the points of development and improvement. It is noticed that the psychological capital has the highest averages, in face of the human capital with the worst averages; such behavior may refer to the fact that the respondents evaluated themselves (psychological capital) in an overestimated way in relation to the human capital, instead of evaluating the respondents as a whole. In short, when evaluating oneself, one notices greater qualities; when evaluating the potential of others, one has a more critical evaluation. It is worth the proposition of checking the literature with the purpose of verifying if there are other ways to measure psychological capital, without using variables that evaluate the individuals themselves. It is reinforced that the variables in the construct were based on the available

national and international literature, widely validated, and that, with this, there is foundation, suggesting only that there may be bias in the collection by self-assessment.

It can be seen that customer capital stands out, suggesting that the company's way of doing business through strategic alliances is seen as a competitive differential among the dimensions. Other information that can be extracted from these means is that only two of the six dimensions were above the median (4), which reveals attention from the company's management.

Table 10:
Observable variables below the median

Variable	Median
Human Capital	
HC2 - In your understanding, the realization of skills upgrading training provided by the company is superior to that of its competitors	2.627
HC1 - When an employee leaves the company, the company has an effective successor training program compared to competitors	2.88
HC5 - The way the recruiting industry acts is better than the competition at finding better candidates	2.907
HC4 - When compared to competitors, employees are satisfied with the company	3.093
HC8 - Analyzing turnover, the company has a lower indicator than its main competitors	3.187
HC3 - In your view, your company's employees are more creative than your competitors	3.613
Structural Capital	
SC9 - The company has well-defined internal processes	3.413
SC3 - Internal systems and procedures support innovation	3.6
SC1 - The company is more efficient in delivering demands compared to competitors	3.693
SC8 - The company's distribution channel format stands out compared to its competitors	3.72
Customer Capital	
CC6 - The way partners make decisions and the unity of purpose in the company is more efficient than that of competitors	3.547
CC3 - If compared to the competition, the company's internal communication is satisfactory	3.573
CC5 - Considering the competitors and the market where it operates, the company is independent of activities and knowledge of third parties, that is, for it to be able to operate it does not have dependencies that make its operation unfeasible	3.8
CC5 - The company continuously improves its work processes	3.907
Cooperation Networks	
CN7 - The company is more innovative than its main competitors	3
CN9 - There is joint development and involvement of the channels in the definition of processes	3.147
CN5 - The investment in marketing and advertising in the company is applied more adequately than in the competitors	3.173
CN12 - Risks and costs between company and sales channels are more equally divided than in the competition	3.347
CN1 - The company's sales channel management is more reliable than that of its main competitors	3.36
CN10 - The way problems are solved between the company and sales channels is more effective than that of competitors	3.467
CN11 - Information sharing between company and channels is more efficient than in the main competitors	3.467
CN8 - The freedom in the company to switch between sales channels is greater than that of competitors	3.507
CN3 - The channels clearly know the company's objectives, even more than the channels of other competitors	3.56
CN2 - Compared to competitors, those responsible for the channel area have credibility to perform the function	3.693

CN4 - The level of channel (business partner) participation in the company's decisions is relevant	3.707
CN6 - The company's product and service portfolio is superior to that of its competitors	3.947
Organizational Performance	
OP9 - The company invests more than the competition to have more qualified employees	2.48
OP8 - The company has higher employee satisfaction	3.227
OP2 - The company is more profitable than its competitors	3.307
OP5 - The company is more efficient in the use of resources than its competitors	3.333
OP12 - The company's customer portfolio grows more than its competitors	3.387
OP6 - The company has quality-oriented internal processes	3.587
OP4 - The company provides products with higher quality than the competition	3.6
OP10 - The company has more creative and innovative employees than the competition	3.613
OP7 - The company develops software solutions faster than the competition	3.693
OP1 - The company is growing fast compared to nearby competitors.	3.733
OP11 - The company has a lean cost structure compared to its main competitors	3.747
OP3 - Compared to competitors, the company has better business success and performance	3.627

Source: elaborated by the author (2022).

When observing the data contained in Table 10, five of the 10 variables with the worst indicators fit into the Human Capital, i.e., the Human Capital dimension must demand the greatest efforts in order to positively impact the company's results. When analyzing the opposite side, six of the 10 variables with the best averages fit into the psychological capital, which, when evaluating the structural equation modeling, presents a non-significant result, so the variable with the best performance, excluding the psychological capital, is the "CR4 - The adoption of innovation practices that characterize the company as being among the leaders in knowledge and implementation of new technologies is essential to obtain good results, CH6 - Employees are encouraged to express their opinions in group discussions" and "CR2 - Compared to competitors, the company has a greater focus on the customer, seeking the greatest possible creation of value to the public served," i.e., the company invests in practices aimed at innovation, encourages employees to express their opinions and, therefore, can instigate a greater focus on solving customer problems.

Given the points of attention, it is recommended that the company observe the following activities:

a) construction of action plans with the intention of investigating the variables that presented the worst and the highest averages, since they may be overestimated;

b) monthly meetings between management and coordination in order to evaluate the actions in progress and to plan actions created in the items above;

c) institutionalization of a team responsible for the innovation processes within the company;

d) institutionalization of the team responsible for internal and external capacity building and training.

Thus, the practical contribution of this study is the clarification, evidencing and explanation of intangible assets and cooperation networks as a source of improvement in competitive advantage, operationalized by organizational performance. Finally, this study can be replicated for companies in the same segment and, thus, can generate a theoretical framework for comparison between samples, thus verifying if the same behavior presented in this company can be replicated for the others.

8   FINAL CONSIDERATIONS

One of the dimensions of intangible assets deals with external relations, the customer capital, in which it is possible to verify the creation of competitive advantage in relationships with external stakeholders. And one way to operationalize it is to seek in strategic alliances a way to optimize competitive advantage, with this, the addition of cooperation networks in the model expands the vision of the company's business and provides a vision of how cooperation can be used for the organic growth of the company in the long term. Finally, in a complex scenario of technological innovations, remote work environments, and scarce market for hiring, analyzing psychological capital is an alternative to achieve a broader explanatory power.

By verifying the effect of cooperation in the association between intangible assets and competitive advantage in a franchising environment, it was possible to verify the relevance of the theme, since it was possible to identify flawed points in the company that was the object of this study, which may be occurring in other companies in this segment or in others. In view of the above, the relevance of this study and of future studies that use the same approach is justified. In addition, it was possible to verify points that need adaptation to meet the vision and mission. Finally, by organizing the models in a chronological manner, it was possible to verify the influence of each model on competitive advantage, operationalized by organizational performance, such as psychological capital, cooperation networks, and all the dimensions of intangible assets on competitive advantage.

The proposed model observed the mediation of the cooperation networks on the intangible asset, verifying that both, individually and jointly, are capable of generating competitive advantage. In a context in which the world economy was affected by COVID-19, remote work environments were necessary, besides investigating the psychological capital as a dimension of the intangible asset, since it allows verifying the generation and destruction of competitive advantage. It was identified that the business model used by the company provides competitive advantage generation through cooperation networks, working together with the dimensions of intangible assets. Another point to highlight is the use of the higher order construct, which is able to show the interactions between first, second and third order dimensions.

When applying the Bontis (1998) model, with the addition of the psychological capital, one notices significance in all dimensions; furthermore, it is verified that the human and psychological capital, in this sample, presents negative path coefficients for competitive

advantage. A highlight point is that the Hope and Optimism dimensions of the psychological capital did not present significance, which can be evaluated as a reflection of the COVID-19 pandemic and initial reflections of the war between Russia and Ukraine, generating an increase in inflationary indices, demotivation of people in relation to their goals and pessimism about the future.

The contribution to the company is the addition of the psychological capital dimension, which goes beyond what people know, but encompasses what they are. Moreover, it provides a diagnosis and notes of relevant improvements for management, operationalizing organizational performance as a source of competitive advantage. By extending the contribution to other companies, this study provides a new model, using bases from previous studies, besides resuming the use of the psychological capital dimension and adding the cooperation networks as optimizers of Intangible Assets to competitive advantage.

As for limitations, it is not possible to generalize the results for the evaluated segment, information technology, because it is a case study, due to the sample collected. And, because it is a technical report linked to a specific company, it is limited to providing a diagnosis and suggestions for improvement and not to implementing or performing actions to improve the processes within the company studied.

Since the model and the research hypotheses were confirmed, it can be stated that the intangible asset optimized by cooperation produces competitive advantage. It was decided to complement the analysis with company data by means of the Kanitz (1978) thermometer.

In the present study, to facilitate the identification and generation of intangible assets, intangible capitals were classified by means of an adaptation of Kanitz's (1978) thermometer. In human and structural capital, a predominance of the penumbra zone is verified, that is, the production of intangible asset generation was in the null zone. As already pointed out, the psychological capital dimension presents only variables classified as good or very good; by Kanitz's (1978) thermometer criteria, one concludes that psychological capital is capable of generating intangible assets. Finally, finalizing the intangible assets, customer capital presents indicators similar to structural capital, that is, intangible assets in a twilight situation.

As the proposed model was significant and indicated that it is able to assess whether there is competitive advantage, when observed the intangible asset, it includes psychological capital and cooperation to determine competitive advantage. The results, through the thermometer, indicate that the company is in the zone of attention in relation to its intangible

assets; this may produce inertia as to its superior performance, i.e., the company will not produce market leadership or competitive differential, stagnating its competitive advantage. This diagnosis allows us to recommend some actions to improve the penumbra zone, so as not to produce intangible liabilities and the company remains in the looping constant.

The diagnosis matches the importance and performance matrix for the set of elements evaluated in the model, which reinforces the attention to the review or implementation of strategies capable of reversing the stagnant performance zone, being possible to achieve the company's mission, which is to innovate every day. This makes our products more practical and efficient day by day, anticipating the future for today's reality inside the companies.

Therefore, it is recommended, as a suggestion for future studies, to expand the sample using the proposed model, in companies that consider cooperation networks by franchising or that opt for another format of cooperation networks. The purpose of these two samples would be to ascertain whether the results, reported in this study, manifest themselves independently of the form with which the company cooperates. Finally, by expanding the sample, it will be possible to ascertain whether the creation of competitive advantage is significantly linked to the junction of intangible assets and cooperation networks, or whether it was represented only in the sample object of this study.

During the process of building this model, it was possible to identify that the psychological capital, in isolation, the intangible asset with the four dimensions and the cooperation networks are able to generate competitive advantage for companies. Furthermore, the mediation of the cooperation networks, in the intangible asset, positively affects the organizational performance. However, there was a finding in this constructive process, in which, by combining the intangible asset with the cooperation networks, here called cooperative intangible asset, it was possible to gauge a greater explanatory power and with a strong path coefficient, a fact that can bring another dimension of the intangible asset to the test, the Social Capital. Therefore, it is recommended, as a future study, the verification of this combination as a source of social capital generation.

REFERENCES

ABES (2021), "Mercado Brasileiro de *software*: panoramas e tendências", ABES. Available at: https://abessoftware.com.br/wp-content/uploads/2021/08/ABES-EstudoMercadoBrasileirodeSoftware2021v02.pdf (accessed October 09, 2021).

ABES (2022), "Mercado Brasileiro de *software*: panoramas e tendências", ABES. Available at: https://abessoftware.com.br/download/45142/ (accessed June 18, 2022).

ABF (2020), "Numeros do *franchising* mostrando o desempenho do setor", ABF, available at: www.abf. com.br/numeros-do-franchising/(accessed August 23, 2021).

Adam, C. R. (2006). Proposição de indicadores para avaliação de desempenho de redes de cooperação [PublishedVersion, Federal University of Santa Maria]. http://repositorio.ufsm.br/handle/1/8339

Adriana da Silva, A., Almeida, R. da S. ., Souza, L. F. da C. ., Vasconcelos, N. J. G. C. de ., & Lima, M. C. da S. . (2022). Impactos psicológicos da pandemia da COVID-19 na vida de pessoas com tourette. Conjecturas, 22(1), 804–818. https://doi.org/10.53660/CONJ-538-812

Ailawadi, KL, Lehmann, DR e Neslin, SA (2003), "Revenue Premium as an Outcome Measure of Brand Equity ", *Journal of Marketing*, Vol. 67, pp. 1-17

Alcaide, M. Á., Guadalajara, M. N., & De La Poza, E. (2021). Modelling it brand values supplied by consultancy service companies: Empirical evidence for differences. *Technological and Economic Development of Economy, 27*(1), 120-148. doi:10.3846/tede.2020.13755

Alon, I., Apriliyanti, I. D., & Henr├¡quez Parodi, M. C. (2021). A systematic review of international *franchising*. *Multinational Business Review, 29*(1), 43-69. doi:10.1108/MBR-01-2020-0019

Anani-Bossman, A. A. (2020). Role of Public Relations in Corporate Reputation Management: A Study of PR Practitioners in Selected Multinational Organisations in Ghana. *Corporate Reputation Review*. doi:10.1057/s41299-020-00105-1

Anderson, Justin. 2011. Measuring the financial value of brand equity: the perpetuity perspective. *Journal of Business Administration* Conectados 10: 1-11

Antunes, M. T. P., da Silva, L. C. P., & Saiki, T. G. Evidenciação dos Ativos Intangíveis (Capital Intelectual) por empresas brasileiras à luz da Lei 11.638/07. Anais Do Congresso Brasileiro De Custos - ABC. Recovered from https://anaiscbc.emnuvens.com.br/anais/article/view/1033

Baierle, I. C., Schaefer, J. L., Sellitto, M. A., Fava, L. P., Furtado, J. C., & Nara, E. O. B. (2020). Moona software for survey classification and evaluation of criteria to support decision-making for properties portfolio. *International Journal of Strategic Property Management, 24*(4), 226-236. doi:10.3846/ijspm.2020.12338

Baluku, MM, Kikooma, JF e Kibanja, GM (2016), "Psychological capital and the startup capital - relação de sucesso empresarial ", *Journal of Small Business and Entrepreneurship*, Vol. 28 No. 1, pp. 27-54.

Bank, Semra, Evrim Yzar e Ugur Sivri. 2020. "The portfolios with strong brand value: More returns? Lower risk?", Borsa Istanbul Análise 20: 64–79.

BARNEY, J. B. Firm resources and sustained competitive advantage. In. Barney, J. B.; Clark, D. N. Resource-Based Theory: Creating and Sustaining Competitive Advantage. *Oxford University Press*, 2007.

Baruah, L., & Panda, N. M. (2020). Measuring corporate reputation: a comprehensive model with enhanced objectivity. *Asia-Pacific Journal of Business Administration, 12*(2), 139-161. doi:10.1108/APJBA-10-2019-0215

Beckers, S. F. M., van Doorn, J., & Verhoef, P. C. (2018). Good, better, engaged? The effect of company-initiated customer engagement behavior on shareholder value [Article]. *Journal of the Academy of Marketing Science*, 46(3), 366-383. https://doi.org/10.1007/s11747-017-0539-4

Berry, L. L. (2000). Cultivating service brand equity. *Journal of the Academy of Marketing Science*, 28(1), 128– 137.

Beuren, I. M. (2010). Como elaborar trabalhos monográficos em contabilidade: teoria e prática. 3. ed. São Paulo: Atlas.

Bharadwaj, N., Hanssens, D. M., & Rao, R. K. S. (2020). Corporate brand value and cash holdings. *Journal of Brand Management, 27*(4), 408-420. doi:10.1057/s41262-020-00188-5

Bharadwaj, A. S., Bharadwaj, S. G., & Konsynski, B. R. (1999). Information technology effects on firm performance as measured by Tobin's q [Review]. *Management Science*, *45*(7), 1008-1024. https://doi.org/10.1287/mnsc.45.7.1008

Bharadwaj, N., Hanssens, D. M., & Rao, R. K. S. (2020). Corporate brand value and cash holdings. *Journal of Brand Management, 27*(4), 408-420. doi:10.1057/s41262-020-00188-5

Bido, D.S., & da Silva, D. (2019). SmartPLS 3: especificação, estimação, avaliação e relato. Administração: Ensino e Pesquisa, 20(2), 1-31. https://doi.org/10.13058/raep.2019.v20n2.1545

Brauers, W. K. M., Zavadskas, E. K., & Lepkova, N. (2017). The future of facilities management in lithuania. *Romanian Journal of Economic Forecasting, 20*(1), 98-115.

Bretas, V. P. G., & Alon, I. (2020). *Franchising* in Brazil: foreign entrants build a presence. *Journal of Business Strategy*. doi:10.1108/JBS-03-2020-0051

Briozo, R., & Musetti, M. (2015). Método multicritério de tomada de decisão: aplicação ao caso da localização espacial de uma Unidade de Pronto Atendimento – UPA 24 h. *Gestão & Produção, 22*. doi:10.1590/0104-530X975-13

Bontis, N. Intellectual capital: an exploratory study that develops measures and model. *Management Decision*, Bingley, v. 36 n. 2, p. 63-76, Feb. 1998.

Cabrita, M. D. R., & Bontis, N. (2008). Intellectual capital and business performance in the Portuguese banking industry. *International Journal of Technology Management*, *43*(13), 212-237.

Chan, Louis, Joseph Lakonishok e Theodore Sougiannis. 2001. The stock market valuation of research and development expenditures. *The Journal of Finance* 56: 2431–56.

Cretu, A. E., & Brodie, R. J. (2007). The influence of brand image and company reputation where manufacturers market to small firms: A customer value perspective [Article]. *Industrial Marketing Management*, *36*(2), 230-240. https://doi.org/10.1016/j.indmarman.2005.08.013

Comitê de pronunciamentos contábeis. Pronunciamento Técnico CPC 04 – Ativo Intangível. Available at: <http://www.cpc.org.br/pdf/CPC04_R1.pdf.> Accessed on Aug. 25, 2021.

Copeland, T.; Koller, T.; Murrin, J. Avaliação de empresas – valuation: calculando e gerenciando o valor das empresas. 3. ed. São Paulo: Makron Books, 2002.

Commer, P., Sci, S., Ali, F., & Muqadas, S. (2015). The Impact of Brand Equity on Brand Loyalty: The Mediating Role of Customer Satisfaction.

Cordeiro, A. S. G., & Almeida, V. O. (2011). *Capital Intelectual e desempenho organizacional no sector farmacêutico português* (Master's thesis, ISMT).

Coser, A. Modelo para análise da influência do capital intelectual sobre a performance dos projetos de *software*, 2012, 220p. Thesis (Doctorate in Knowledge Engineering and Management), Federal University of Santa Catarina, Florianópolis, 2012.

Demirakos, E. G; strong, N. C.; Walker, M. What valuation models do analysts use? *Accouting Horizons*, Washington, v. 18, n. 4, p. 221-240, Dec. 2004.

Eisenhardt, K. M., & Zbaracki, M. J. (1992). Strategic decision making. *Strategic Management Journal, 13*(S2), 17-37. doi:https://doi.org/10.1002/smj.4250130904

Elbanna, S. (2006). Strategic decision-making: Process perspectives. *International Journal of Management Reviews, 8*(1), 1-20.doi:https://doi.org/10.1111/j.14682370.2006.00118.x

Fragoso, R. C. (2015). Avaliação de redes de cooperação empresarial em goiás [PublishedVersion, Pontifical Catholic University of Goiás]. http://localhost:8080/tede/handle/tede/2482

Flower, J. Global Financial Reporting. New York: Palgrave, 2002.

Furrer, O., Thomas, H. & Goussevskaia, A. (2008) The structure and evolution of the strategic management field: a contente analysis of 26 years of strategic management research. *International Journal of Management Reviews*, v. 10. n. 1, p. 1-23.

Gao, Q., Wu, C., Wang, L. e Zhao, X. (2020), "O capital psicológico do empreendedor, criativo comportamento de inovação e desempenho empresarial", *Fronteiras em psicologia*, Vol. 11, pág. 1651

Gubiani, J. S. Modelo para diagnosticar a influência do capital intelectual no potencial de inovação nas universidades, 2011, 194p. Thesis (Doctorate in Knowledge Engineering and Management), Federal University of Santa Catarina, Florianópolis, 2011.

Hair Jr, J.F., Hult, G.T.M., Ringle, C., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Los Angeles: Sage

Hoang, T., Hoang, N., & Phuong, N. (2018). The impact of intellectual capital dimensions on Vietnamese information communication technology firm performance: A mediation analysis of human and social capital. *Academy of Strategic Management Journal, 17*.

Hwang, C. L., & Yoon, K. (1981). *Multiple Attribute Decision Making: Methods and Applications*. New York.

Hendriksen, E. S.; Van Breda, M. F. Teoria da Contabilidade. 5. ed. São Paulo: Atlas, 2011

Hitchner, J. R. *Financial valuation: applications and models*. 2. ed. Hoboken: Wiley, 2006.

Hsu, P. and Chen, B. (2008), "Integrated analytic hierarchy process and entropy to develop a durable goods chain store franchisee selection model", *Asia Pacific Journal of Marketing and Logistics*, Vol. 20 No. 1, pp. 44-54. https://doi.org/10.1108/13555850810844869

Hoss, O. (2003). Modelo de Avaliação de Ativos Intangíveis para Instituições de Ensino Superior Privado. (Doctorate Thesis). Federal University of Santa Catarina, Florianópolis, SC.

Hoss, O. (2008). Modelo Hoss de Avaliação de Ativos Intangíveis. 2, 12–18.

Hoss, O. (2021). Avaliação de ativos intangíveis: sistemática e validação científica no parque tecnológico Itaipu Brasil – PTI Brasil. *Advances in Scientific and Applied Accounting*. Recovered from https://asaa.anpcont.org.br/index.php/asaa/article/view/83

Iriyanto, S., Suharnomo, Hidayat, M. T., & Anas, M. (2021). Do intangible assets and innovation orientation influence competitive advantages? A case study of SMEs in Indonesia. *Universal Journal of Accounting and Finance, 9*(1), 105-115. doi:10.13189/ujaf.2021.090111

Kaufmann, H. R., Loureiro, S. M. C., Basile, G., & Vrontis, D. (2012). The increasing dynamics between consumers, social groups and brands. Qualitative Market Research: An *International Journal*, 15(4), 404–419. doi:10. 1108/13522751211257088

Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57(1), 1 –22.

Krueger, N. (2020), "Potencial empreendedor e empreendedores potenciais: 25 anos depois", Jornal do Conselho Internacional para Pequenas Empresas, Vol. 1 No. 1, pp. 52-55.

Laghi, E., Di Marcantonio, M., Cillo, V., & Paoloni, N. (2020). The relational side of intellectual capital: an empirical study on brand value evaluation and financial performance. *Journal of Intellectual Capital*. doi:10.1108/JIC-05-2020-0167

LEV, B. Measuring the value of intellectual capital. *Ivey Business Journal*, Ontario, v. 65, n. 4, p. 16-20, Mar./Apr. 2001.

Lima, A. C., & Carmona, C. U. (2011). Determinantes da formação do capital intelectual nas empresas produtoras de tecnologia da informação e comunicação. *RAM. Revista de Administração Mackenzie*, *12*(1), 112-138.

Lima, A., Luna, R., & Sousa, A. (2012). Evolução do Sistema de Franquias no Brasil. *Revista Brasileira de Marketing, 11*. doi:10.5585/remark.v11i1.2261

Liguori, EW e Pittz, TG (2020), "Estratégias para pequenas empresas: sobrevivendo prosperando na era de COVID-19", *Jornal do Conselho Internacional para Pequenas Empresas*, Vol. 1 No. 2, pp. 106-110.

Lugoboni, L. F., Silva, M. V., Zittei, M. V. M., Nascimento, J. O., & Murcia, F. C. S. (2021). Gestão do Capital Intelectual nos Correios. *Revista ENIAC Pesquisa*, 10(1), 155-177.

Luthans, F. (2002) Positive Organizational Behavior: Developing and Managing Psychological Strengths. *Academy of Management Executive*, 16, 57-75. http://dx.doi.org/10.5465/AME.2002.6640181

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M. (2006). Psychological capital development: toward a micro-intervention. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *27*(3), 387-393.

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive Psychological Capital: Measurement and Relationship with Performance and Satisfaction. *Personnel Psychology*, 60, 541-572. https://doi.org/10.1111/j.1744-6570.2007.00083.x

Jain, V. (2018). Application of combined MADM methods as MOORA and PSI for ranking of FMS performance factors. *Benchmarking-an International Journal, 25*(6), 1903-1920. doi:10.1108/bij-04-2017-0056

Malär, L., Krohmer, H., Hoyer, W. D., & Nyffenegger, B. (2011). Emotional brand attachment and brand personality: The relative importance of the actual and the ideal self. Journal of Marketing, 75(4), 35–52. doi:10.1509/ jmkg.75.4.35

Marconi, M., & Lakatos, E. M. (2003). Fundamentos de metodologia científica. 5. ed. São Paulo: Atlas.

Matoso, J. (2013). Vantagem competitiva no mercado de *software*: o caso da Totvs. (Master's Dissertation). Federal University of Paraná, Curitiba, PR.

Miciak, M. (2019). The efficiency of investment in human capital in IT enterprises. *Transportation Research Procedia*, 40, 1134-1140. doi: https://doi.org/10.1016/j.trpro.2019.07.158

Oliveira, Martha Olivia Rovedder, Aline Armanini Stefanan e Mauri Leodir Lobler. 2018. Equidade de marca, risco e retorno em latim América. Jornal de gestão de produtos e marcas 27: 557–72.

Palacios, T. M. B.; Galván, R. S. Intangible measurement guidelines: a comparative study in Europe. *Journal of Intellectual Capital*, Bingley, v. 8, n. 2, p. 192-204, Apr. /jun. 2007.

Pablos, P. O. D. Measuring and reporting structural capital: Lessons from European learning firms. *Journal of Intellectual Capital*, v. 5, n. 4, P. 629-647, 2004.

Pappu, R., & Quester, P. G. (2006). Does customer satisfaction lead to improved brand equity? An empirical examination of two categories of retail brands. *Journal of Product & Brand Management*, 15(1), 4–14. doi:10.11 08/10610420610650837

Peinado, Elaine Sefrian. Intellectual capital and business performance in pharmaceutical company. 2016. 91 p. Dissertation (Master's in Competitiveness and Sustainability) – Western Paraná State University, Cascavel, 2016.

Peteraf, M. A.; Barney, J. B. Unraveling the Resource-based Triangle. *Managerial and Decision Economics*, v. 24, p. 309-323, 2003.

Petter, R. R. H. (2012). Modelo para análise da competitividade de redes de cooperação horizontais de empresas [PublishedVersion, Federal University of Technology - Paraná]. http://repositorio.utfpr.edu.br/jspui/handle/1/592

Radonić, M., Milosavljević, M., & Knežević, S. (2021). Intangible assets as financial performance drivers of it industry: Evidence from an emerging market. *E a M: Ekonomie a Management, 24*(2), 119-135. doi:10.15240/tul/001/2021-2-008

Rep, A. (2019). Accounting treatment of intangible assets-analysis of computer programming companies. *International Journal of E-Services and Mobile Applications, 11*(3), 61-77. doi:10.4018/IJESMA.2019070105

Richard M. Ryan & Edward L. Deci (2000) The Darker and Brighter Sides of Human Existence: Basic Psychological Needs as a Unifying Concept, Psychological Inquiry, 11:4, 319-338, DOI: 10.1207/S15327965PLI1104_03

Richardson, R. J (1999). Pesquisa social: métodos e técnicas. 3. ed. São Paulo: Atlas.

Roberts, P. W., & Dowling, G. R. (2002). Corporate reputation and sustained superior financial performance [Article]. *Strategic Management Journal*, *23*(12), 1077-1093. https://doi.org/10.1002/smj.274

Ryan, RM e Deci, EL (2000). Motivações intrínsecas e extrínsecas: definições clássicas e novas instruções. *Psicologia Educacional Contemporânea*, 25: 1, 54–67.

Saaty, T. L. (2013). The Modern Science of Multicriteria Decision Making and Its Practical Applications: The AHP/ANP Approach. *Operations Research*, *61*(5), 1101-1118. https://doi.org/10.1287/opre.2013.1197

Sallaberry, Jonatas Dutra. Relação entre os ativos intangíveis e o valor de mercado das empresas brasileiras. 2014. 99 p., il, color. Dissertation (Master's in Accounting Sciences) — Multi-institutional and Inter-Regional Postgraduate Program in Accounting, University of Brasília, Federal University of Paraíba, Federal University of Rio Grande do Norte, Brasília, 2014.

Schmidt, P.; Santos, J. L. Avaliação de ativos intangíveis: goodwill, capital intelectual, marcas e patentes, propriedade intelectual, pesquisa e desenvolvimento. 2. ed. São Paulo: Atlas, 2009. 206 p.

Sharabati, A.-A., Radi, A.-R., Nour, A., Dorra, P., & Moghrabi, P. (2013). The Effect of Intellectual Capital on Jordanian Tourism Sector's Business Performance. *American Journal of Business Management, 2*, 210-221. doi:10.11634/216796061302370

Shiu, H. J. The application of the value added intellectual coefficient to measure corporate performance: evidence from technological firms. *International Journal of Management*, Dorset, v. 23, n. 2, p. 356-365, jun. 2006.

Shocker, Allan D. 1991.Equidade da marca: uma perspectiva sobre seu significado e medição. Relatório da série de documentos de trabalho do Marketing Science Institute. Cambridge: *Marketing Science Institute*, pp. 91–124

Srivastava, R. K., Shervani, T. A., & Fahey, L. (1998). Market-based assets and shareholder value: A framework for analysis [Article]. *Journal of Marketing*, *62*(1), 2-18. https://doi.org/10.2307/1251799

Stewart. T. A. Capital Intelectual: a nova vantagem competitiva das empresas. Rio de Janeiro: Campus, 1998.

Sveiby, K. E. A nova riqueza das organizações: gerenciando e avaliando patrimônios do conhecimento. Rio de Janeiro: Campus, 1998.

Tálamo, J. R. (2008). Formação e gestão de redes de cooperação empresarial [PublishedVersion, University of São Paulo]. http://www.teses.usp.br/teses/disponiveis/3/3136/tde-11082008-173540/

Tatsch, M. P. (2010). Fatores de competitividade de empresas organizadas em redes de cooperação [PublishedVersion, Federal University of Santa Maria]. http://repositorio.ufsm.br/handle/1/8145

Tefera, C. A., & Hunsaker, W. D. (2021a). Measurement of intangible assets using higher-order construct model. *Journal of Entrepreneurship in Emerging Economies*. doi:10.1108/JEEE-08-2020-0297

Tefera, C. A., & Hunsaker, W. D. (2021b). Using psychological capital at organizational levels of study. *Journal of Advances in Management Research*. doi:10.1108/JAMR-08-2020-0179

Tenório, F. G. Gestão de ONG's: principais funções gerenciais. Rio de Janeiro: FGV, 2001.

Yin, R. K. Estudo de Caso: Planejamento e Métodos. Bookman editora, 2005.

Valmorbida, S. M. I., Ensslin, S. R., Ensslin, L., & Bortoluzzi, S. C. (2013). Avaliação de desempenho organizacional: panorama das publicações em periódicos nacionais. *Sociedade, Contabilidade e gestão*, *7*(2).

Vodák, J., Kucharčíková, A., 2011. Efektivní vzdělávání zaměstnanců. Grada Publishing, Praha, pp. 237. Waze Mobile. 2019. [online] [cit. 01.10.2019] Available at: <https://www.waze.com/sk/about>.

Woodroof, P. J., Deitz, G. D., Howie, K. M., & Evans, R. D. (2019). The effect of cause-related marketing on firm value: a look at Fortune's most admired all-stars [Article]. *Journal of the Academy of Marketing Science*, *47*(5), 899-918. https://doi.org/10.1007/s11747-019-00660-y

Wudhikarn, R. (2020). The hybrid intellectual capital valuation method. *Economic Research-Ekonomska Istraživanja*, 1-20. https://doi.org/10.1080/1331677X.2020.1860798

Zavadskas, E. K., Antucheviciene, J., Saparauskas, J., & Turskis, Z. (2013). MCDM Methods waspas and multimoora: verification of robustness of methods when assessing alternative solutions. *Economic Computation and Economic Cybernetics Studies and Research, 47*(2), 5-20.

Zavadskas, E. K., & Turskis, Z. (2011). Multiple criteria decision making (mcdm) methods in economics: an overview. *Technological and Economic Development of Economy, 17*(2), 397-427. doi:10.3846/20294913.2011.593291

Zimmermannová, J. (2020). Methods in Microeconomic and Macroeconomic Issues. In V. t. Pászto, C. Jürgens, P. Tominc, & J. Burian (Eds.), Spationomy: Spatial Exploration of Economic Data and Methods of Interdisciplinary Analytics (pp. 119-147). Cham: *Springer International Publishing*.

APPENDIX A – RESEARCH SURVEY

RESEARCH ON THE EFFECT OF INTANGIBLE ASSETS ON COMPETITIVE ADVANTAGE MEDIATED BY COOPERATION NETWORKS

Dear Sir/Madam,

This is a scientific research developed in the Professional Master's in Administration at the Western Paraná State University (UNIOESTE - Cascavel), by the student Fernando Damke, under the guidance of Professor Dr. Delci Grapegia Dal Vesco. In this research, it is intended to verify with the employees the perception of the effect of intangible assets and their dimensions on competitive advantage mediated by cooperation networks.

Important information:

- It is a requirement that the respondent must have at least 6 months in the company;

- The confidentiality of the answers is ensured by grouping the data in a statistical manner, without individualizing them;

- The time to complete the questionnaire is approximately 15 minutes.

- The response scale is from 1 to 7, where 1 corresponds to strongly disagree with your company and 7 to strongly agree.

In case of questions, you can contact us through the e-mails below:

Fernando Damke – Master's Degree Student in Administration – fernando_damke@hotmail.com

Prof. Dra. Delci Grapégia Dal Vesco – Doctor in Accounting and Administration

Regional University of Blumenau – delcigrape@gmail.com.

SOCIAL INFORMATION OF THE RESPONDENT

Positin in the company:

( ) Internal coordinator ( ) Internal employee ( ) Management ( ) Sales channel

Time in the company:

( ) less than 1 year ( ) equal to 1 and less than 2 years ( ) equal to 2 and less than 5 years ( ) over 5 years

Time in the job:

( ) less than 1 year ( ) equal to 1 and less than 2 years ( ) equal to 2 and less than 5 years ( ) over 5 years

Level of education:

( ) High school incomplete ( ) High school complete ( ) Higher education incomplete ( ) Higher education complete ( ) Post-graduation complete

Age:

( ) 20 or less ( ) Between 21 and 30 ( ) Between 31 and 40 ( ) Between 41 and 50

( ) Over 51

Gender:

( ) Male ( ) Female ( ) Other ( ) I prefer not to say

STATEMENT	1	2	3	4	5	6	7
INTELLECTUAL CAPITAL							
When an employee leaves the company, the company has a successor training program for his replacement							
The company gets the most out of its employees when they cooperate with each other on team tasks							
The company constantly supports its employees by conducting skills upgrading trainings							
As an employee, in your view the company's employees are considered creative and bright							
The employees are satisfied with the company							
The company's recruitment program is comprehensive, and is dedicated to hiring the best candidates available							
Employees are encouraged to express their opinions in group discussions							
The company's employees always perform their best							
Employees work for many years at the company (turnover is very low)							
The time it takes to complete the entire process of software implementation for the customer has decreased over the past years							
The company implements a lot of new ideas							
The company prides itself on being efficient							
(Internal) data systems allow easy access to relevant information							
Internal systems and procedures support innovation							
Company processes are not bureaucratic							
The company culture and atmosphere is supportive and comfortable							
The company has a well-developed performance-related variable pay system							
The company continuously develops work processes							
A survey with our customers indicates that they are generally satisfied with our company							
The company has greatly reduced the time to solve customer problems							
The company's market share has continuously improved over the past years							
Customers are loyal to the company, more than to any other competitor							
The company prides itself on being market oriented							
The company maintains regular contact with industry associations in order to share information							
The company has many and diverse partnerships in R&D, production, marketing and distribution							
The company has several distribution channels (commercial representations)							
A part of the company's business is done through strategic alliances							
The company provides new ways of working (remote, hybrid)							
The company is customer-focused, seeking the greatest possible creation of value for the public it serves							
The level of internal communication in the company is satisfactory							
The adoption of innovation practices that characterize the company as being among the leaders in the knowledge and implementation of new technologies is essential to obtain good results							
The company has well defined internal processes							
The company has no dependence on third party activities and knowledge							
The consistency and unity of purpose among partners allows the company to have a course of action with lower risks and more tranquility to implement strategy and operations							
PSYCHOLOGICAL CAPITAL							
I feel confident in analyzing a long-term problem to find a solution.							
I feel confident representing my team in meetings							
I feel confident contributing to discussions during meetings							
I feel confident helping to set goals/objectives for myself							
If I found myself in trouble, I could think of several ways out of it							

I am currently pursuing my goals energetically							
I am currently achieving the goals I have set for myself							
At the moment, I see myself being very successful in my job							
When I have a setback in my activities, I find it difficult to recover, to move on							
I usually manage difficulties in one way or another during the course of my job							
If necessary, I can be "on my own", so to speak, during my day-to-day work at the company							
I usually face stressful situations simply and calmly							
When things are uncertain for me, I usually hope for the best.							
If something can go wrong for me as far as my role in the company is concerned, it will							
I always see the bright side of things in relation to my day to day life within the company.							
I am optimistic about what will happen to me in the future regarding my current role							
COOPERATION NETWORKS							
I feel confident in the management of the sales channels							
Those responsible for the channel area have credibility to perform their function							
The channels clearly know the company's objectives							
The level of participation of the channels (business partners) in the company's decisions is relevant							
There is integration among the sales channels							
The company invests adequately in marketing and advertising							
The company provides a variety and diversity of products and services							
The company has innovation capacity							
The company is free to exchange information among the sales channels							
The channels are jointly developed and involved in the definition of processes							
There is joint problem solving between the company and the sales channels							
Information is shared between the company and the sales channels							
Risks and costs are equally shared between the company and the sales channels							
ORGANIZATIONAL PERFORMANCE							
The company is growing fast.							
The company is more profitable							
The company achieves greater customer satisfaction							
The company has better business success and performance							
The company provides higher quality products							
The company is more efficient in the use of resources							
The company has quality-oriented internal processes							
The company develops software solutions quickly							
The company has higher employee satisfaction							
The company has more qualified employees							
The company has more creative and innovative employees							
The company has a lean cost structure							
The company's client portfolio is constantly growing							
The company's competitive market condition is satisfactory							

APPENDIX B – SUGGESTED MODEL UNDER HIGHER-ORDER CONSTRUCT FOR SOCIAL CAPITAL ASSESSMENT