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Rethinking Business Valuation: A Bibliometric Review of Intangible Elements as Key Value Drivers. The Role of Managers in Value Creation

Repensando la Valoración Empresarial: Revisión Bibliométrica de los Intangibles como Impulsores Clave del Valor. El Rol Directivo en la Creación de Valor

Arkaitz Bañuelos Campo*, Juan Carlos Ayala Calvo[a]

[a] *Universidad de La Rioja. Departamento de economía y empresa. Av. de la Paz, 93-103, 26006 Logroño, La Rioja, España. +34690835937 – juan-carlos.ayala@unirioja.es – https://orcid.org/0000-0002-0883-2149*

* ***Corresponding author:*** *Universidad de La Rioja. Departamento de economía y empresa. Av. de la Paz, 93-103, 26006 Logroño, La Rioja, España. +34674900650 – arkaitz.banuelos@unirioja.es – https://orcid.org/0009-0001-9012-137X*

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ABSTRACT

Traditional business valuation methods do not consider most intangibles that affect the value of the company, although they are considered as key elements by both researchers and practitioners. Research in this field is not consolidated yet and although some authors have attempted to address this issue, there is no standardized list of intangible variables that can be systematically included in the valuation process. The objective of this study was to identify all intangibles studied regarding firm value, classify them into clusters and observe their relevance in the scientific literature over the years through a bibliometric approach. Using VOSviewer visualization tool, from the review of 843 published papers in the Web of Science (WOS) in the last two decades, we obtained 5 clusters of intangible variables related to firm value: Strategy and firm characteristics; External elements to the firm; Ownership structure; Management structure; and Stakeholders and CSR. "Strategy and firm characteristics" was the cluster with the highest scientific output, and "ownership structure" the most influential. We found that most of the intangible elements that affect the value of the company can be managed by the company's management. This makes managers the key element in value creation.

Keywords: Intangible elements, Clustering, Bibliometric analysis, Value creation, Managers decisions.

RESUMEN

Los métodos tradicionales de valoración de empresas no tienen en cuenta la mayoría de los intangibles que afectan al valor de la empresa, aunque tanto los investigadores como los profesionales los consideran elementos clave. La investigación en este campo aún no está consolidada y, aunque algunos autores han intentado abordar esta cuestión, no existe una lista estandarizada de variables intangibles que puedan incluirse sistemáticamente en el proceso de valoración. El objetivo de este estudio es identificar todos los intangibles estudiados en relación con el valor de las empresas, clasificarlos en clusters y observar su relevancia en la literatura científica a lo largo de los años mediante un enfoque bibliométrico. Utilizando la herramienta de visualización VOSviewer, a partir de la revisión de 843 artículos publicados en la Web of Science (WOS) en las dos últimas décadas, obtuvimos 5 clusters de variables intangibles relacionadas con el valor de la empresa: Estrategia y características de la empresa; Elementos externos a la empresa; Estructura de propiedad; Estructura de gestión; y RSC y los grupos de interés. «Estrategia y características de la empresa» fue el cluster con mayor producción científica, y "estructura de propiedad" el más influyente. Descubrimos que la mayoría de los elementos intangibles que afectan al valor de la empresa pueden ser gestionados por la dirección de la empresa. Esto convierte a los directivos en el elemento clave de la creación de valor.

Palabras clave: Elementos intangibles, Clustering, Análisis Bibliométrico, Creación de valor, Decisiones de los directivos.

1. INTRODUCTION

The determination of the value of a company is one of the most studied aspects in the academic literature referring to the business field. Estimating the value of the company is fundamental from the point of view of both shareholders and investors as well as of business management and the organization's managers (Triani & Tarmidi, 2019; Vayas-Ortega *et al.*, 2020a).

For investors, given the inefficiencies in the financial market, the possibility of obtaining positive returns is linked to the accuracy with which the intrinsic value of the company is determined and to the systematic errors in market expectations (Lu *et al.*, 2021).

From the point of view of corporate governance, determining the correct value of the company is fundamental from two different perspectives. First, management activity is evaluated by the ability of the managers to create value for the owners. Second, the firm's managers are the only ones who can create value by developing and sustaining competitive advantages that generate cash flows that provide a return exceeding the cost of capital (Koller *et al.*, 2010).

There are numerous tools that allow us to estimate the real value of a company. Traditional valuation methods, including Discounted Cash Flow method and valuation by multiples (Huang *et al.*, 2023), use quantitative variables such as cash flows or corporate profit to determine the value of the company. However, none of them include in the valuation process the economic value of key intangible elements for the company such as human capital (Vomberg *et al.*, 2015), brand reputation (Luo *et al.*, 2013) or innovation (Min & Smith, 2016) among others. An increasing number of authors defend that this type of elements has a fundamental role in the value of the companies (Belo *et al.*, 2022; Gyapong *et al.*, 2016; Kumar *et al.*, 2021). Research in this field, however, has been piecemeal and the intangibles considered in explaining entrepreneurial value have been many and varied in nature. Despite their importance in the value of the company, it is difficult to introduce intangibles in the valuation if we cannot even identify which qualitative aspects may be susceptible to be included in these processes. Although various authors have proposed different approaches for identifying, measuring, and incorporating certain intangible assets into the valuation process (Bueno *et al.*, 2011; García-Merino, 2015; Rodríguez-Castellanos *et al.*, 2007), as far as we know, not all of the intangible elements discussed in the literature have been fully identified in a way that establishes a widely accepted taxonomy of intangibles that contribute to a company's value.

Numerous authors have put forward models that attempt to explain the relationship between a single intangible, or a short list of intangibles, and firm value (Andriessen, 2004; Kumar *et al.*, 2021; Sorescu & Spanjol, 2008). The literature also includes holistic models that aim to integrate all the intangible drivers of enterprise value. Among these, the Intellectus Model (Bueno *et al.*, 2011) stands out for its rigor and global approach. These "integrative" models represent a significant advance in research on intangibles as drivers of business value. However, the intangibles they incorporate are not derived from a systematic review of prior literature on intangibles and the firm and may therefore be incomplete. In the words of Peters and Taylor (2017), much work remains to be done in the identification and measurement of intangibles. Thus, identifying the full set of intangibles studied is essential in order to develop new, more rigorous models. Moreover, these integrative models were developed more than a decade ago. The ongoing need to adapt intangible identification models to an ever-evolving social and economic context both guides and justifies continued efforts to improve upon earlier proposals (Bueno *et al.*, 2011). Analyzing this temporal evolution can allow us to determine which intangibles are currently regarded as most relevant by both academics and practitioners. In light of the identified gaps in the literature and the need to clarify the role of intangible assets in business valuation, the main objective of this study is to identify and structure the intangible elements addressed in the literature as explanatory factors of firm value, offering an updated and comprehensive view that reflects their thematic grouping, the attention they have received over time in the literature, and their academic relevance, with the aim of facilitating their future inclusion in business valuation models. To articulate this overarching aim, the study is organized around the following specific objectives: The first specific objective is to develop an updated list of those elements that could be included in the valuation process. Additionally, we will analyze whether the variables can be grouped into different clusters that define the structure of this field of knowledge. By grouping the variables obtained into clusters, a much more comprehensible list of intangibles can be generated (Corrado *et al.*, 2009). In addition, the creation of clusters provides a valuable framework for understanding the business environment. When studying a complex phenomenon such as intangibles that drive value it is necessary to examine not only each variable individually, but also the associations among them. This approach enables a comprehensive view of the phenomenon, facilitates a deeper understanding, and ultimately supports more informed practical decision-making (Maseda *et al.*, 2023). Due to the relevance that business value has on the work of managers (Koller *et al.*, 2010), it is interesting to know whether the intangible elements that can generate business value are internal to the company, so they can be managed by managers or, on the contrary, are external hence uncontrollable. The second specific objective is to analyze the evolution over time in the study of identified intangibles. This will allow us to determine which intangibles attracted greater interest from researchers in the past and which are more frequently studied today.

The third specific objective is to analyze the importance given to each group of intangible elements in academic literature, both in terms of the number of articles published and their volume of citations.

Our work contributes to the existing literature by enabling structuration of the field of knowledge related to the impact of intangible elements on business value, complementing and expanding the previous proposals offered in the literature. The main contributions of our study are the following: firstly, based on a sample of 843 articles; by analyzing for the first time and systematically reviewing the most relevant literature on the studied phenomenon from 2000 to 2022, we obtain an updated list of all the intangibles studied in relation to value. Secondly, we grouped the identified variables into 5 clusters, in this way, we are able not only to obtain a more comprehensible list of intan-

gibles but also to understand the relationships among them. Thirdly we structure this field of knowledge by analyzing the temporal evolution in the study of these variables. This allows us to identify which intangibles are currently attracting the most interest from researchers and investors. Fourth, we determined the impact of each cluster in the literature over the last 25 years. The results of this study are a first, necessary step, which will allow us to open a line of research to determine which intangibles are really relevant in the company. This will facilitate the inclusion, by investors, of intangibles in the valuation process. Additionally, it will allow managers to know the most important qualitative variables to manage in order to enhance the value of their companies. Identifying the most highly valued intangibles today enables managers to focus their limited resources on the development of these intangibles.

Finally, our results contribute to the debate on whether company managers are the only agents that can generate value through the creation of sustainable competitive advantages, as suggested by authors such as Koller *et al.* (2010).

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. Value as a measure of business performance

The analysis of the existing literature revealed different points of view regarding the suitability of using firm value as a measure of business performance. He *et al.* (2020), among others, use variables such as profit, sales volume, stock returns or financial indicators such as financial or economic profitability, to approximate performance. Whereas the company's profit or economic profitability only takes into account the interests of one part of the organization, value creation considers the long-term interests of all stakeholders and not only those of shareholders (Koller *et al.*, 2010); which contributes to reducing agency problems (Triani & Tarmidi, 2019).

In line with authors such as Bardos *et al.* (2020) and Subagyo (2021), this study adopts a broad interpretation of firm value as a forward-looking estimate of a company's ability to generate sustainable performance, taking into account both its market valuation and financial indicators derived from its accounting situation.

The creation of value as an essential objective of the company is even more important in turbulent times such as the one we live in, due to the global geopolitical situation and the consequences of successive crises that have affected firm performance, such as the one triggered by COVID-19 (Hu & Zang, 2021) and the one resulting from the war in Ukraine (Ferriani & Gazzani, 2023). According to Koller *et al.* (2010) one of the keys to avoiding future financial crises, such as the one suffered in 2008, the 1998 Southeast Asian crisis or the "Internet Bubble" lies in reaffirming the basic economic rules by valuing any type of investment according to the guiding principle of value creation, always taking into account the underlying risk.

Considering some of the major current situations of economic turmoil, the crisis triggered by the pandemic once again translated into a shock to global financial markets, causing a drastic decline in firm value (Albuquerque *et al.*, 2020). Subsequently, the wars in Ukraine and the Middle East and the recent trade war triggered by the tariffs imposed by the United States have also significantly affected the value of companies in a wide range of industries. While the current environment does not strictly resemble traditional economic crises, it can be considered a context of accumulated instability. Unlike previous episodes, such as the 2008 financial crisis or the Southeast Asian crisis, the current challenges combine health emergencies, geopolitical tensions, supply chain disruptions, and an accelerated digital transformation. This convergence of systemic pressures creates a unique scenario that tests the adaptability of firms and the robustness of their strategic approaches. Therefore, in order to ensure the survival of a company and try to achieve the highest possible performance, it is key to propose business strategies that allow cushioning the impact of the crises on the value of the company including the management and valuation of intangible assets (Ding *et al.*, 2021). Given the distinctive nature of today's context, the intangibles that firms prioritize may also differ from those emphasized in past periods.

The current research trend, which gives greater importance to stakeholder value models than to shareholder value models (Bose *et al.*, 2022), is used as an additional discussion for prioritizing the preservation of company value over other performance indicators in times of crisis.

2.2. Business valuation

Business valuation has been studied extensively over the years. Numerous authors have sought to determine the correct method for calculating the true value of a firm. Williams (1938) laid the foundations of modern financial valuation by developing the Dividend Discount Model (DDM). In this model, Williams emphasized the difference between intrinsic value and market price, highlighting the importance of cash flow expectations and the use of a risk-adjusted discount rate. Modigliani and Miller (1958) demonstrated that, in a perfect market, the capital structure does not affect the value of the firm, as it depends solely on the cash flows generated by the assets. Reinforcing the idea proposed by Williams (1938), Sharpe (1964) developed the Capital Asset Pricing Model (CAPM), a model that integrates systematic risk into the discount rate used in valuation, thereby complementing previous models. Fama and French (1993) expanded the CAPM by introducing new variables to explain variations in asset returns. While the CAPM focuses on systematic risk (Beta), the Fama and French (1993) model adds size and value factors, providing a more comprehensive view of the various risk factors that affect the value of financial assets.

Currently, when determining the value of the company the Discounted Cash Flow model (DCF) is the valuation method that seems to have attracted the greatest consensus among academics (Huang *et al.*, 2023). This is due to the fact that this model determines the value of the company following the basic financial principles of valuation seen in early literature. However, the valuation by multiples through the price/earnings ratio is the most widely used method by financial analysts (Huang *et al.*, 2023). Both models include forecasts about future economic flows generated by the company and incorporate risk when discounting those flows and determining value (Huang *et al.*, 2023).

Both the discounted cash flow method and the price-earnings model include, for their valuation, only quantitative variables such as profit, sales, cash flows, and balance sheet items, among others, leaving aside the economic value of numerous intangible assets that are not reflected in the annual accounts and that may affect the value.

2.3. *Importance of intangibles in Firm Value*

Intangible assets have become the main driver of company's value and economic growth in recent years. However, despite their importance, many managers are reluctant to consider them as value drivers. Most of the economic disbursements in intangible elements (brand development, spending on innovation, etc.) are still considered as expenses by some managers, and not as investments (Gu & Lev, 2011). Another reason why most intangibles are excluded from a company's valuation is the inherent difficulty in quantifying them. Accounting information systems, which are grounded in traditional accounting practices, lack the capability to precisely measure intangibles and their economic impact in numerical terms. This challenge is particularly pronounced for intangibles that are not readily identifiable, separable, or do not arise from legal or contractual rights (García-Merino, 2015).

The non-inclusion of intangible elements in the value of the company is a major problem for both investors and managers. On the one hand, for investors seeking to acquire part of the ownership of a company, deficient information on the intangible elements developed by the company can be a major source of losses. On the other hand, managers are the primary drivers of value creation within the company (Koller *et al.*, 2010). However, if intangible assets are not accounted for in the company's valuation, managers may lack the necessary precision to determine whether their decisions are genuinely generating value for stakeholders.

In turn, when analyzing the market value of companies, it can be seen that very frequently the market itself systematically assigns a much higher value to companies than that reflected in their financial statements. The difference between the two values is so large that it cannot be attributed solely to elements inherent to the financial markets nor to aspects external to the companies themselves. Numerous authors highlight the absence of intangible elements in valuation as a key factor in explaining this gap, which can reach up to 50% of a company's total value (Belo *et al.*, 2022).

Many authors argue that a greater commitment to intangibles in the company is particularly relevant to the evolution of the company's price in crisis situations. On the one hand, investment in intangibles has been observed as a protection mechanism against the sharp fall in corporate value in crises such as the financial crisis suffered in 2008 (Albuquerque *et al.*, 2020) as well as in the crisis caused by COVID 19 (Demers *et al.*, 2021). On the other hand, investing in intangibles has been shown to reduce stock price volatility in situations of economic uncertainty (Bouslah *et al.*, 2018).

2.4. *Inclusion of intangibles in Firm Value.*

Different authors have attempted to include intangibles in firm valuation. (Corrado *et al.*, 2009) define three main categories of intangibles: R&D, computerized information, and economic competencies, using aggregate expense data and the perpetual inventory method to calculate them. Other authors such as Eisfeldt and Papanikolaou (2013) and Eisfeldt *et al.* (2022) define intangibles through selling, general and administrative expenses (hereinafter SG&A). Peters and Taylor (2017), following the previous trend, determine the company's intangibles taking into account the SG&A, to which they only give a value of 30%, adding R&D expenses, giving these the main role when valuing the company's intangibles. These studies highlight the strength of using a set of intangibles that can be clearly identified, fulfilling one of the requirements proposed by Andriessen (2004), and which can also be measured using as a proxy various types of expenses incurred by the firm. Furthermore, they categorize the intangibles with the aim of developing a comprehensible list of intangibles (Corrado *et al.*, 2009). However, likely due to the limited and disparate list of intangibles considered, these studies have yielded contradictory results. That is, depending on the study, different intangibles are deemed relevant. A major weakness observed in previous studies is that they lack a holistic view of the phenomenon. Previous studies only consider intangibles related to innovation, firm management expenses, product sales costs, etc. However, they overlook other types of intangibles that the literature has already shown to be powerful drivers of firm value, such as board of directors characteristics (Gyapong *et al.*, 2016), corporate social responsibility (Servaes & Tamayo, 2013), human capital (Vomberg *et al.*, 2015), brand reputation (Luo *et al.*, 2013), among others. On the other hand, one of the leading academic approaches aimed at identifying the intangibles that can be incorporated into a company's value is the intellectual capital framework. This concept encompasses a set of knowledge-based intangibles —such as applied experience, professional skills, and expertise— that can create value for the company (Edvinsson & Malone, 1997). Intellectual capital seeks to account for the non-monetary sources of an organization's wealth creation (Andriessen, 2004). Various models have been developed to further refine this concept, aiming to establish a structured approach to categorizing the types of intangibles that can be integrated into valuation processes. Among these, the "Intellectus Model" is particularly notable, as it classifies intellectual capital into four categories: "Human Capital," "Structural Capital," "Relational Capital," and "Entrepreneurship and Innovation Capital" (Bueno *et al.*, 2011). Models based on intellectual capital, such as the Intellectus model, seek, unlike previous models, to integrate all the intangibles that influence firm value. The underlying idea in these models, the need to integrate all possible intangible drivers of value into the analysis, forms the starting point of our research. However, when it comes to identifying intangibles, none of these models have systematically analyzed the intangibles previously studied in the literature. This fact, which can be considered a weakness of previous models, is addressed in our research. Furthermore, in the current context, there is a need to adapt the models to a constantly evolving social and economic reality (Bueno *et al.*, 2011). Over the years, intangibles that were once considered highly relevant may have lost importance, and other relevant intangibles may have emerged that were not included in previ-

ous models. All of this highlights the need to develop a methodology that allows for the identification of those intangibles that have been overlooked and, at the same time, enables the observation of the evolution of the importance that researchers and practitioners have attributed to them over time as drivers of value.

In recent decades numerous authors have tried to find intangible elements capable of explaining the increase in corporate value in certain situations: Core competencies (Rodríguez-Castellanos *et al.*, 2007; García-Zambrano *et al.*, 2013, 2014), innovation (Sorescu & Spanjol, 2008), corporate social responsibility (Servaes & Tamayo, 2013), consumer satisfaction (García-Merino *et al.*, 2014), board characteristics (Gyapong *et al.*, 2016), training and advertising policies (García-Zambrano *et al.*, 2018), or marketing strategy (Kumar *et al.*, 2021), etc., are among these elements. However, there is no consensus on which elements should be included and which others should be excluded in the valuation process, so there is no standardized and universally accepted list in this regard. In addition, the importance given to different intangibles at different points in time has not been analysed.

3. METHODOLOGY

3.1. Sample

The analysis is based on scientific articles contained in the "Web of Science" database, the first international database created and currently the most influential and recognized one when performing bibliometric analysis (Li *et al.*, 2018).

The sample of articles was drawn as of November 29, 2022. In order to identify as many articles as possible, the main objective of which was to analyze firm value, we first selected all those whose title or keywords included the concept "firm value". We are aware that the selection of keywords may be subject to author bias; however, keywords are the most commonly used tool in the literature as a first approach that helps to reveal the knowledge structure of a research field (Maseda *et al.*, 2023). Secondly, we refined our search by taking into account those articles that belonged to the main collection of the WoS and that were included in the "business economics" research area. In terms of language and time reference, we have included in our sample all articles published in both English and Spanish from 2000 to November of 2022. Finally, we obtained a sample of 843 articles. These are articles already published and articles with early access, which are pending publication.

3.2. Data analysis

To identify the different variables collected in the literature that identify intangible elements that influence business value, we proceeded in two clearly differentiated steps. Firstly, we analyzed each scientific article individually in order to identify, upon reading each paper, the intangibles studied in them. Secondly, we performed a bibliometric analysis to complement the results obtained in the first step that allowed us to group the different variables into clusters.

Bibliometric techniques presents an important limitation: the algorithms and applications developed to determine the relevant terms that define our field of knowledge only take into account the number of times a word appears in the texts and the co-occurrence with the rest of the terms. Co-word analysis is used to map the strength of relationships between terms. If two concepts co-occur in an article, the two research topics are correlated (Maseda *et al.*, 2023). Although bibliometric applications, through this co-occurrence study, contribute to the systematization of the literature review, using replicable and objective protocols that minimize human bias (Maseda *et al.*, 2023), these applications are not able to identify the meaning of the words, as it is achieved through a manual review by experts. It is therefore interesting to combine both techniques (Demeter *et al.*, 2019). In the development of our study, we used text mining to be able to perform our bibliometric analysis.

In our case, prior to the bibliometric analysis and in order to avoid its limitations, a first analysis was made of each of the articles in order to eliminate all those whose main objective was not to study a causal relationship between the independent variables, whether tangible or intangible and business value, as well as those for which no published information was available. Thus, a total of 14 articles were excluded, the 1.66% of the total. Next, a second, separate analysis was carried out by each author to extract the tangible or intangible elements associated with enterprise value studied in each article. Thereafter, we discarded those articles that exclusively analyzed the influence of tangible elements on value. In undertaking this classification, we identified as intangibles those variables that do not appear on the company's financial statements due to the difficulty of being quantified in monetary value, yet can contribute to enhancing the company's competitive position by adding value to key stakeholders (Gamayuni, 2015). We adopt a broad interpretation of "intangible elements," consistent with how the literature often approaches the concept in the context of firm value. While some variables, such as firm age, size, diversification or debt policy, might not be classified as intangible assets in the strictest sense, they are frequently used in academic research as proxies or indicators of intangible capabilities. For instance, firm age can reflect accumulated knowledge or organizational maturity (Petruzzelli *et al.*, 2018); size may relate to structural complexity or the ability to mobilize intangible resources or the realization of economies of scale (Celli, 2013); and debt policy is often associated with a firm's capacity for financial flexibility and strategic diversification of funding sources (Tripathy & Uzma, 2022; Yousefi & Yung, 2022). This inclusive approach allows us to capture not only explicit intangible assets but also contextual factors that reflect or influence the firm's capacity to generate value through intangibles. Subsequently, and based on the results obtained, both authors re-evaluated their results in order to reach a consensus and extract a single list of those intangible elements that explain entrepreneurial value found in the literature. Discrepancies were resolved through a structured comparison of the authors' lists, jointly reviewing the corresponding articles based on the study's inclusion criteria to ensure consistent classification.

Once the relationship of intangible elements was obtained, the next step was to perform a bibliometric analysis of the same articles, in order to check whether the results obtained were equivalent and thus reinforce our initial results. Following authors such as Demeter *et al.* (2019) and Rodríguez-Rodríguez *et al.* (2021), to perform our text mining analysis, we used the VOSviewer 1.6.20 tool. Following the steps of text mining, first, defining the corpus of our research, we downloaded from WoS those articles that define our sample including their title and abstract. Once the downloaded file was entered into the application, VOSviewer developed an automatic functionality from which it created a list of terms (based on their occurrence in the texts) that potentially describe the research field. In a previous step, we identified all those words that appear 7 times minimum in the analyzed documents, as recommended by the application itself. In this way, we obtained a preliminary list of 519 words. In our case, following Demeter *et al.* (2019), we used the total count method instead of the binary count method. The total count indicates the total number of times a word appears in each paper, while the binary just indicates the presence or absence of the word in each paper. The total count technique has two advantages: first, it avoids the loss of information of the binary counting technique. Second, it offers a more detailed view of the cooccurrence of terms, since, if two terms appear four times, for example, in the abstract and title of an article, their union will be four times stronger than if we use the binary count where each term would only be counted once (Demeter *et al.*, 2019). Due to its greater simplicity, the binary method can be a good alternative to use when identifying the most relevant terms over a whole time period (Demeter *et al.*, 2019). Binary methods, in turn, can neutralize bias in long and repetitive documents, where a term may appear excessively repeated (Perianes-Rodriguez *et al.*, 2016). Therefore, while the binary method can be useful when studying general trends or conducting an exploratory analysis, when analyzing the co-occurrence of terms, we consider it more appropriate to use the total counting method. From this list, we performed an exhaustive analysis to obtain a new list of much more valuable words for our research. First, we identified those concepts related to intangible elements that explain value and grouped the synonyms into a single concept considering the variables identified in the manual identification carried out in the first step of the research. Each author conducted a separate analysis of the original concepts obtained to group synonyms into a single term (for example, family firm, family business, and family enterprise were grouped into "family firm"). Subsequently, the groupings made by each author were shared. Finally, both authors reevaluated their results to reach a consensus and extract a single list of variables. Minor discrepancies were resolved through a brief joint review of the proposed groupings. Then, we raised the model again taking into account, due to the grouping of words with the same meaning in a single concept, only those terms that appeared at least 20 times. After obtaining a new list of 191 words, the information was filtered. Firstly, we proceeded to eliminate all words without semantic meaning such as pronouns, connectors, or articles. Secondly, we eliminated all those words that appeared in many instances in the abstract of any article but that had nothing to do with the study of intangibles and the value of the company, since they were generic concepts or words typical of any research. Words such as "paper", "investigation", "significant", etc. Thirdly, in order to delimit our scope of study, we eliminated all words that had to do with the dependent variable (company value) or with quantitative variables such as "revenue", "profit", etc. Thus, we obtained a total of 32 constructs that included all the qualitative variables related to company value.

Finally, once the relationship of intangible variables had been identified, we used the VOSviewer tool to perform two types of analysis: the elaboration of a cluster of variables and the analysis of the evolution of the field of knowledge. VOSviewer uses a technique called "theme analysis" to create term maps based on distance, where the distance between concepts reflects the strength of their relationship. Thus, when analyzing our maps, the shorter the distance, the greater the co-occurrence of the terms analyzed in the articles that make up our object of analysis. For the formation of these clusters, the relationships between variables are determined by the number of times that these variables simultaneously appear in the articles studied. The clustering of terms was performed automatically by VOSviewer using the Leiden algorithm with a resolution parameter of 1.0, as recommended by the application itself. The minimum cluster size was set to 1, as indicated by default in the application, allowing the tool to detect even narrowly connected groups of terms.

In addition to identifying clusters, our purpose was to check the evolution of the field of knowledge, identifying what has been studied in the past, what is currently studied, and in which direction that field of study will possibly go in the future. Therefore, we performed a temporal analysis of the variables through the mapping offered by VOSviewer.

Finally, and thanks to the information obtained in relation to the journals of publication, number of citations, etc., we analyzed the productivity and influence of each of the clusters, these two variables being understood as the two main metrics for studying the output of scientific research. Productivity is generally measured by the number of published articles, while influence is measured by the number of citations. VOSviewer has an important limitation in that it does not identify the journal to which each article belongs nor the number of citations of each paper. Therefore, in the manual review of each article, carried out in the first step of this study, we also manually identified this information for each of the articles in our sample.

4. RESULTS

As can be seen in Figure 1, between 2000 and 2022, researchers have identified 32 constructs or variables representing intangible elements that could influence the explanation of company value.

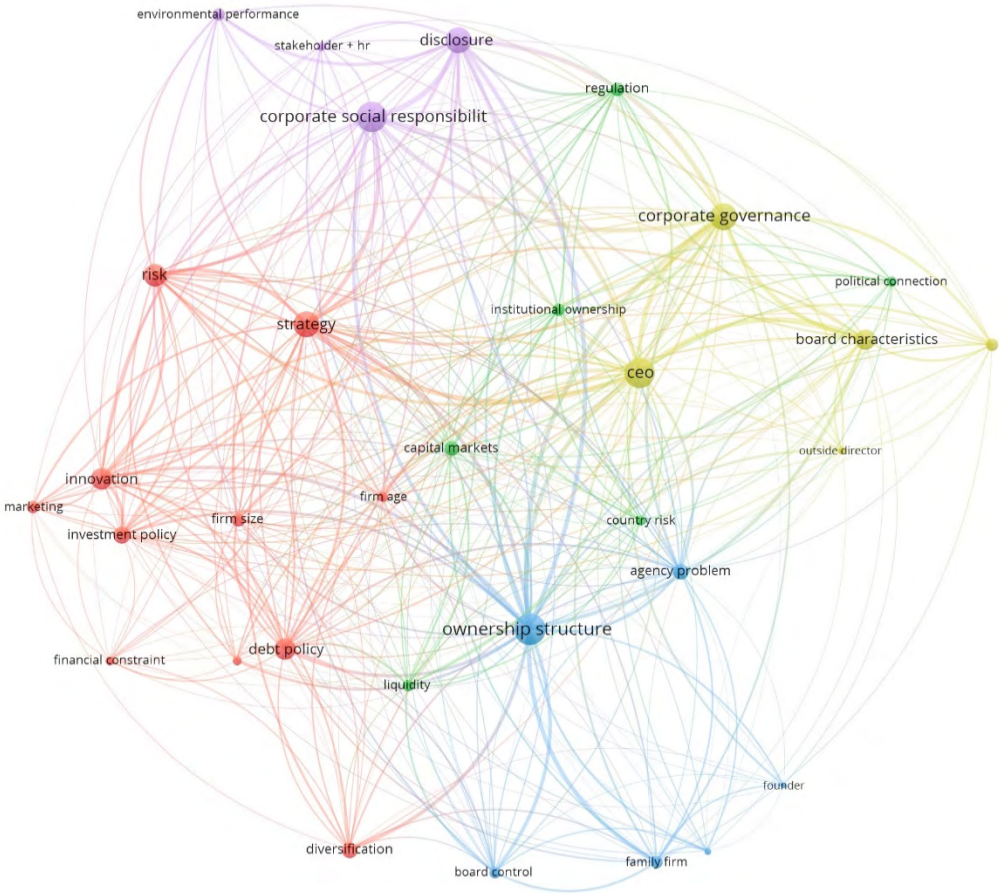

Figure 1
Clusters based on co-occurrence of terms
Source: Author's own elaboration.

These 32 variables are grouped into 5 clearly differentiated clusters. Each of the variables is identified as a dot on the map with the corresponding color of its cluster. The size of the representative point will be larger the greater the number of occurrences of this term in the analyzed literature. We can also observe the existing relationships between the different terms, according to the thickness of their connecting lines. The distance between the terms marks their correlation, with those terms that are more closely correlated being closer.

Based on the variables collected in the different clusters, we assigned interpretive labels to each group. In the first cluster we find two types of variables, firstly, those that refer to the company's own characteristics, among which are the age of the company, understood as the number of years it has been in operation, and the size of the organization. Secondly, those that describe business policy and strategy. Here we find from the determination of the level of indebtedness, sources of financing and investment alternatives (financial strategy), to other types of specific business strategies such as marketing strategy or innovation, to general concepts of competitive and corporate strategy. This cluster groups the variables that have traditionally been identified as those over which managers have direct control, which makes them the key element in creating value in the company (Koller *et al.*, 2010). This cluster was identified as "Strategy and company characteristics".

The second cluster includes variables related to the characteristics of the financing sources to which the company can have access, either primary or secondary markets. On the other hand, there is the country risk variable, which reflects all those elements uncontrollable by the company, related to the markets in which it operates, and which may affect its performance. Finally, we find another series of external elements such as regulation and the possibility for institutional bodies to participate as shareholders of the company. Although some of the variables included in this cluster might, a priori, seem unrelated, they all share a fundamental characteristic: They are all elements outside the company, beyond the control of management, but which nevertheless affect the organization's performance. However, despite not having direct control, managers can make decisions to adapt to them. This cluster was defined as "elements external to the company".

The third cluster is made up of the variables related to the ownership of the company. This cluster shows that in addition to management decisions, the number of shareholders, their characteristics, the presence of a family owner, the permanence of the founder in the company, or the commitment of the shareholders to the company, reflected through the control exercised by them, can influence the value of the company. Taking into account the variables that make it up, we will call this cluster "ownership structure"

The fourth cluster encompasses the variables related to the characteristics of the company's managers, as well as the practices they carry out, which is why we called it "managerial structure". The presence of this cluster corroborates the central importance of the management team in the value of the company, giving a new dimension to the importance of managers in business value. We can observe how the market not only values the decisions taken by the managers, but also the characteristics of the managers themselves, the way in which the management team is structured and the characteristics of the CEO have a direct effect on the value of the company.

The fifth and last cluster includes elements that define the company's relationship with all stakeholders, where elements such as personnel management stand out. On the other hand, we find the company's commitment to the environment and society as a whole, with particular attention to the company's transparency and dissemination of information on its business practices. The fact that there is a specific cluster for Corporate Social Responsibility and stakeholder management, especially for employees, highlights the importance of managing these variables. This cluster was labeled as "Corporate Social Responsibility and Stakeholders". All the variables identified, as well as the clusters they are grouped in, are shown in Table 1.

Table 1
Intangible variables explaining business value and clusters formed

Cluster	Variables	
Company strategy and characteristics	— Debt policy	— Investment policy
	— Diversification	— Ownership of directors
	— Financial restrictions	— Business strategy
	— Age	— Assumed risk
	— Size	— Marketing Policy
	— Innovation	
Elements external to the company	— Financial markets	— Market liquidity
	— Country risk	— Political connections
	— Institutional owners	— Regulation
Ownership structure	— Agency problems	— Family Firm
	— Proprietary control over management	— Minority owners
	— Founder	— Ownership structure
Management structure	— Characteristics of the Board of Directors	— Independent directors
		— Corporate Governance
	— CEO Characteristics	— External executives
CSR and stakeholders	— Corporate Social Responsibility	— Eco-efficiency
	— Stakeholders and employees	— Transparency and dissemination of information

Source: Author's own elaboration.

The size and density of the different clusters obtained provide relevant information both about the clusters themselves and about the phenomenon under study at a general level. The size of a cluster depends on the number and relevance of the elements it comprises. Larger clusters, such as the "Company strategy and characteristics" cluster, indicate more developed or better-represented thematic areas within the data. Smaller clusters, such as in this case the "CSR and stakeholders" cluster, represent more specific, emerging, or less-researched topics (Van Eck & Waltman, 2010). However, it is important to clarify that the lower size of this cluster does not necessarily reflect a lack of academic interest or relevance. On the contrary, our temporal and citation analysis shows that many of its elements, such as human capital, disclosure, or CSR, have gained significant traction in recent years. Therefore, the smaller size of this cluster is due to the limited attention these intangibles received in earlier periods, although they are now increasingly relevant in light of current research trends. Density refers to the intensity of the connections among the elements within each cluster. Clusters with higher density, such as in this case "Company strategy and characteristics" and "Ownership structure," are composed of highly interconnected concepts, representing consolidated lines of research. In contrast, low-density clusters, such as "Elements external to the company," are composed of more dispersed concepts (Van Eck & Waltman, 2010).

Finally, the positioning of the clusters on the map reveals information about the relationships between them, which allows us to better understand the importance of intangibles in today's business environment. More central clusters are more connected to other topics and represent interdisciplinary aspects (Van Eck & Waltman, 2010). Changes in the intangibles included in these clusters may affect a larger number of other intangibles. On the other hand, peripheral clusters represent more specialized and independent areas (Van Eck & Waltman, 2010). In our case, we can observe that aspects related to CSR are more independent from the rest of the clusters. However, the "External elements to the company" cluster represents aspects that may impact all areas of the firm.

Figure 2 shows the constructs that have been most analyzed over the years, showing in a color closer to blue the most studied terms in the initial years of our sample (year 2000) and in a color closer to yellow, the most studied concepts at present.

We can see how, while in the early 2000s the most studied intangible elements explaining value were those related to investment policies, marketing, the founder or the diversification strategy, nowadays elements such as CSR, transparency and disclosure of information, human resources or the company's political connections are studied to a greater extent. The intangibles represented in yellow are those currently attracting the most attention. This suggests stronger market reactions to these intangibles compared to more traditional ones that have lost prominence in recent years. From these results, it can be inferred that managers should focus their efforts and resources on developing CSR policies, establishing fruitful political connections, or implementing an efficient debt policy. Nevertheless, it is important to highlight the relevance of the interconnections among intangibles and the need to understand the model as a global phenomenon. Therefore, other intangibles, although perhaps to a lesser extent, should also be taken into account.

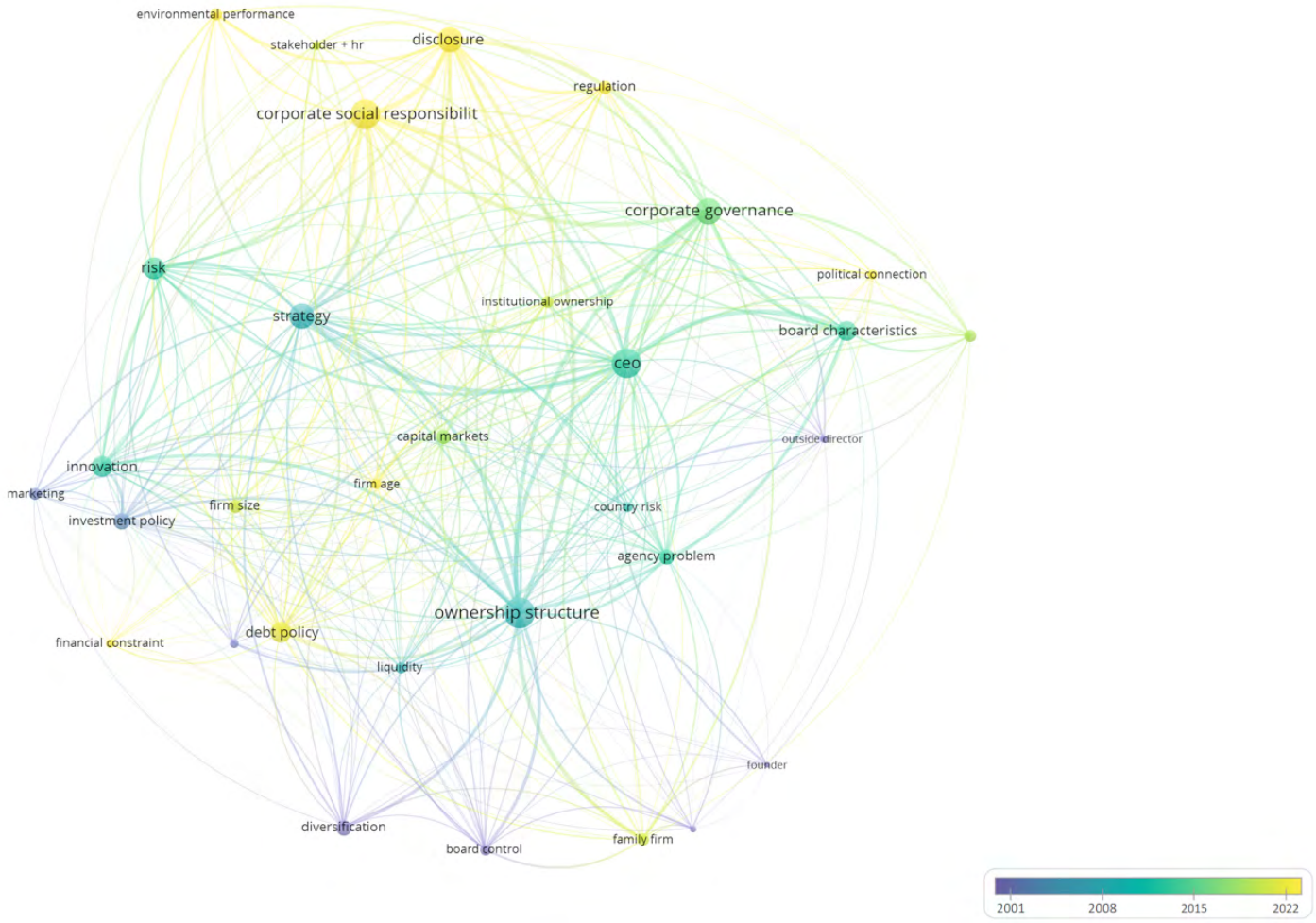

Figure 2
Time evolution in the study of the intangibles
Source: Author's own elaboration.

Additionally, we can observe a certain coherence between the identified clusters and their temporal evolution. With some exceptions, the clusters "Company strategy and characteristics" and "Ownership structure" encompass most of the intangibles studied at the beginning of the analysis period, whereas clusters such as "CSR and stakeholders" include the majority of the intangibles that are more extensively studied today.

The observed evolution in the study of intangibles within the literature is not arbitrary, but rather linked to the economic, social, and institutional transformations that have occurred over the past two decades. Among the most notable are the growing relevance of corporate sustainability and ESG standards (Barbosa *et al.*, 2023), the institutionalization of the Sustainable Development Goals (SDGs) (Galeazzo *et al.*, 2023), and increasing societal demands for ethical, transparent, and responsible business conduct (Adewole, 2024). These trends have led companies to prioritize value creation strategies grounded in CSR and stakeholder management over more traditional approaches, such as diversification policies. These shifts have progressively shaped the research agenda, which seeks to explain the elements most relevant in each specific period.

Once the results provided by the VOSviewer application were obtained, and in order to overcome the limitations it offers, we proceeded to analyze the productivity and influence of each of the clusters, including each article individually in its corresponding grouping. In this way and trying to study the impact on the academic literature of each group of intangible elements, our results show that the first cluster, "Strategy and characteristics of the company", concentrates 300 published articles, with a total of 7,286 citations, which means an average of 24.28 citations per article. The second cluster, "Elements external to the company", includes 112 articles with a total of 2,726 citations (24.34 citations per article). The third cluster, "Ownership structure" consists of a total of 75 articles with a total number of 5,105 citations (66.86 citations per article). The fourth cluster, called "Managerial structure", groups a total of 157 articles with a total of 3,221 citations (20.51 citations per article). The fifth and last cluster, "CSR and stakeholders" is made up of a total of 179 articles with 4,829 total citations (26.98 citations per article). It is worth noting that this fifth cluster, despite being the one that has been studied for the least number of years, has the second highest average number of citations per article, thus demonstrating the relative importance of the variables associated with CSR.

5. DISCUSSION AND CONCLUSSIONS

Our results support the thesis proposed by authors such as Belo *et al.* (2022) who defend the importance of including intangible elements in determining the value of a company. In the last 20 years, more than 800 publications have analyzed this relationship and the relevance of its implications in both the financial and business management fields. In line with our general objective to offer a structured and updated view of the intangible factors that explain firm value and support their inclusion in valuation models, our first specific objective was to identify all the intangible elements addressed in the literature and to group them into clusters that reflect the thematic structure of the field. As a result, we identified 32 intangible variables that have been studied over the last 20 years by researchers to explain firm value can be grouped into 5 clusters: Strategy and firm characteristics, Ownership structure, Management structure, Corporate Social Responsibility and stakeholders, and Elements external to the firm. As part of our second specific objective, we analyzed the temporal evolution in the study of the identified intangibles, observing a clear shift in academic focus over time. Whereas earlier research prioritized traditional elements, such as diversification strategies or investment policies, recent years have seen growing attention to contemporary concerns like Corporate Social Responsibility, stakeholder engagement, and disclosure. This shift reflects an underlying change in the priorities of both academia and the business world. Finally, in relation to our third specific objective, analyzing the impact on scientific literature of the intangible elements analyzed, it is worth noting that the cluster with the highest productivity is "Strategy and characteristics of the company" followed by "Corporate Social Responsibility and stakeholders". The variables included in the "Ownership structure" cluster, those that question the exclusivity of managers as value-creating agents in the company, despite having been studied in only 75 articles, present an average of 67 citations per article, well above the rest of the groupings, which show an average of between 20 and 27 citations per article. Based on the results of our research, several relevant contributions emerge for both business practice and academic inquiry. These contributions are particularly valuable for managers, investors, and emerging scholars interested in understanding and advancing the role of intangibles in firm valuation.

5.1. Research contributions for practice.

Our research concluded that enterprise value is affected by both internal and external intangible elements, which has important implications for business management. Company managers are obliged, if they want the market to value their work, not only to take into account aspects of business strategy, investment or marketing policies, but also to develop their relationship with the environment through transparency and corporate social responsibility. Our results showed that most of the intangible variables that explain value are company-specific and therefore manageable by management. This has major implications from the point of view of business management, making clear the responsibility of managers in value creation (Koller *et al.*, 2010). It is noted that the company's managers play a decisive role in company value creation. The decisions made by managers, as well as their characteristics, largely explain firm value. However, our results challenge the idea that managers are the only agents capable of creating value. The presence of the cluster "Ownership structure" shows that, in addition to the managers and their decisions, the market also assigns a greater or lesser value to the company depending on its owners. Therefore, aspects such as the atomized nature of the company's capital, the types of shareholders, or the presence of one or several families in the ownership structure can lead to greater value. On the other hand, with regard to the temporal evolution in the study of intangibles, the results of our study allowed us to identify the elements that currently attract the greatest attention from researchers. The higher volume of scientific production concerning the importance of certain intangibles in firm value suggests stronger market reactions to these intangibles, compared to other traditional ones that have lost relevance in recent years. Knowing which intangibles are most relevant today constitutes an important starting point for managerial decision-making. It is worth noting the increasing importance that the literature attaches to the relationship between the company and its environment, giving greater importance to CSR policies and stakeholder care as drivers of value (Bardos *et al.*, 2020). This is an important reference point, once again, for managers, who must focus their business policies on this type of variable if they want to promote the sustainable growth of their company. Decisions relating to Corporate Social Responsibility and stakeholder management, as well as human capital, are one of the decisions that managers must take the greatest care of. The presence of a differentiated cluster related to CSR, as well as the greater scientific production currently referring to this type of variable, shows that managers must focus their efforts in this direction if they want to ensure that the market values their company more highly. Another key intangible that is currently receiving significant attention in the academic literature is debt policy. Numerous authors have emphasized the importance of managing aspects such as the level of indebtedness (Subaygo, 2021), financial flexibility (Yousefi & Young, 2022), and debt diversification (Tripathy & Uzma, 2022), among others, in relation to firm value. Our results suggest that managers should pay special attention to this intangible in order to develop successful value-creation strategies. Thirdly, another intangible that should be actively managed due to its significant impact today is the creation of political connections. Managers who, in addition to effectively managing the organization, are able to build fruitful and lasting political ties will significantly enhance their firm's value (Brown & Huang, 2020). Finally, another intangible worth considering, particularly by investors, is the condition of being a family firm. Although this intangible is not directly manageable by managers, it is included in the "Ownership structure" cluster, which currently attracts the most attention in the literature. This result suggests that investors should take into account aspects such as family control over the company (Cid *et al.*, 2022) and the influence of non-family members (Ni *et al.*, 2020) when selecting companies for their portfolios with the aim of achieving high potential returns.

5.2. Avenues for future research.

The results of our study represent an important starting point for emerging scholars aiming to advance research in the

field of business valuation. Two key research avenues arise from our findings. First, there is a clear opportunity to develop new valuation models that more comprehensively incorporate intangible elements. Although previous proposals exist, such as the Intellectus Model, which integrate various intangibles into the analysis of their impact on value, our research has revealed the existence of intangible elements that had not been considered in prior approaches. The incorporation of these newly identified intangibles, alongside those already included in earlier studies, would allow for the construction of more accurate and rigorous valuation models. Among the main intangibles identified that have not yet been addressed in what might be considered integrative models, and which, given their significant impact today, would be strong candidates for inclusion in future models, are managerial political connections, the condition of being a family firm, and disclosure.

Second, future research could focus on prioritizing the identified intangible elements. Using a Delphi method involving a panel of experts, formed by academics, investors, and managers, scholars could determine which of the 32 intangibles are the most important intangible elements and therefore, which ones should be included in the valuation process. This would permit to establish a standardized list that could guide both academic research and practical decision-making. Additionally, it would be interesting to study the relationship between the 5 clusters identified. Studying the effect of each one of them on the decisions taken by managers with the aim of creating value in the company.

5.3. Limitations

This work, like all works, has limitations. Perhaps the most important one stems from the impossibility of bibliometric analysis applications, in our case VOSviewer, to identify the meaning of the words analyzed (Demeter *et al.*, 2019) in co-word analysis. Although bibliometric analysis facilitates the objective identification of thematic clusters (Aparicio *et al.*, 2023), it should be used as a complement to conventional literature reviews (Maseda *et al.*, 2023). This implies the need to perform a manual review of the literature, individually analyzing each of the articles, which may introduce author bias and also limits the sample size to be used. The second limitation lies in the use of WoS as the sole database employed as an information source, overlooking others such as Scopus or Google Scholar. The authors chose this criterion due to the need to manually review each article and with the aim of minimizing duplications with other databases. However, it might be interesting to broaden the scope of research in the future by including articles from other databases after a thorough analysis. Despite these limitations, our study presents a number of strengths worth highlighting: First, it makes an important contribution to the literature, structuring the field of knowledge referred to the influence of intangible elements on business value. For the first time, we conducted an exhaustive review of the literature, identifying all the intangibles studied and analyzing their evolution over time. Secondly, we combined two methodologies for a more accurate identification of intangible elements. We performed a manual literature review combined with a bibliometric analysis, which allows us to solve the different problems presented by both methodologies separately and to obtain higher quality results. Finally, we identified for the first time a list of all the intangible variables related to enterprise value, which constitutes a first step towards the development of the future research lines previously discussed.

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