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Business Valuation Unveiled: A 40-Year Bibliometric Perspective on Trends and Transformation

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Abstract

This bibliometric analysis examines the development, intellectual framework, and emerging trends in business valuation research from 1984 to 2024 utilizing VOS viewer. The results indicate a consistent increase in research output over the last forty years, with a notable surge post-2010, drawing attention to the field's escalating significance in contemporary financial markets and competitive environments. The primary thematic areas identified are financial modelling, strategic analysis, and risk assessment, which are fundamental to the literature on business valuation and central to firm competitiveness. The research emphasizes methodological progress in domains including real options analysis, cost of capital, and income approaches. Recent studies show a trend toward putting valuation within strategic frameworks, with a focus on innovation, intangible assets, and competitive advantage. This evolution signifies the transformation of valuation from a purely financial tool into a key driver of strategic decision-making and long-term value creation. Emerging trends suggest a transition toward the incorporation of business valuation with strategic factors such as innovation and competitive advantage, further reinforcing its role in shaping organizational competitiveness. Future research is anticipated to concentrate on intangible asset valuation, sustainability challenges, and the impact of digital transformation on valuation methodologies, all of which have growing implications for firms' ability to achieve and sustain competitive advantage**.**

Keywords: *bibliometric, business valuation, financial management, systematic review*

JEL Classification: M21, G31

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1 INTRODUCTION

The global economic crisis has exposed significant shortcomings in traditional business valuation methodologies, which are heavily grounded in capital market theory (Matschke et al., 2010; Damodaran, 2001). These conventional approaches often rely on idealized assumptions of perfect markets and optimal competition, creating a gap between theoretical models and real-world applications. Existing literature in the field predominantly centres on classifying various valuation methodologies and debating which approach yields the "correct" value (Matschke et al., 2010). Traditional business valuation methods have primarily focused on the financial and monetary representation of a company, utilizing financial, economic, and accounting data. However, such information often reflects prevailing market conditions, which can be influenced or distorted by short-term investor sentiment or cyclical economic fluctuations (Koller et al., 2020; Razali et al., 2022). According to Pratt (2008), business valuation is the process of identifying, gathering, and analysing both financial and non-financial information in order to estimate the economic value of a business entity. The process is not directly evaluated by the efficacy of business practices and the operational facets of companies (Razali et al., 2022). The

evaluated results are used in the commerce pricing for business decisions and intangible assets. (Seng & Lai, 2010).

Business valuation is rooted in financial economics, with discounted cash flow (DCF) analysis, market-based valuation, and asset-based approaches still used (Wang et al., 2023). The DCF method is widely used in banking and technology to estimate the present value of projected future cash flows. In assessing bank and technology firm equity value, it shows its versatility across industries (Aura et al., 2019; Li, 2020). The DCF model, while theoretically robust, is highly sensitive to assumptions about future cash flows and discount rates, making it vulnerable to estimation errors and subjective biases (Damodaran, 2012). Moreover, it assumes a level of predictability in business performance that may not hold in volatile or innovative sectors (Penman, 2013). Similarly, market-based valuation approaches rely heavily on market comparables, which can be problematic due to the lack of truly comparable companies or transactions, particularly in niche or emerging industries (Hitchner, 2017). Recent developments in valuation research highlight a growing transition from traditional, finance-centric models toward more holistic frameworks that incorporate non-financial factors. This shift reflects the evolving nature of modern enterprises, where intangible assets and qualitative dimensions often constitute significant drivers of value. For instance, intellectual property such as patents, proprietary technology, and brand equity has gained prominence as a core component of firm valuation, particularly in knowledge-based and innovation-intensive industries (Lev & Gu, 2016). Additionally, sustainability considerations, including environmental, social, and governance (ESG) performance, are increasingly recognized for their material impact on long-term financial performance and risk exposure (Eccles et al., 2014; Joshi et al., 2021; Xu et al, 2024). Market dynamics, such as consumer sentiment, regulatory trends, and technological disruption, are now considered essential to capturing a firm's strategic position and growth potential (Koller et al., 2020). These developments underscore the need to expand conventional valuation approaches to account for the multifaceted nature of value creation in the 21st-century business environment. Advanced technologies like Automated Valuation Models (AVMs) and Geographic Information Systems (GIS) have improved valuation accuracy and efficiency (Alzaidan, 2024; Filippova et al., 2021). Traditional methods must adapt to modern business environments, where intangible assets and sustainability are key value drivers (Cheong et al., 2023; Cui, 2023). Ly & Phung (2024) investigates the impact of new product announcements by focal firms on the market value of their competitors. Factors such as inflation, interest rates, and geopolitical uncertainty complicate valuation. To navigate the uncertainties of a rapidly changing global economy, agile valuation approaches are necessary for strategic planning (Saługa et al., 2020; Lilford et al., 2018). The accelerating pace of digital transformation presents both significant challenges and new opportunities for the field of business valuation. According to Wang et al. (2023) as organizations increasingly adopt digital technologies; ranging from artificial intelligence and big data analytics to blockchain and cloud computing; the nature of value creation is undergoing a fundamental shift. This evolution complicates the valuation process, particularly in assessing the worth of digital assets, platform-based business models, and data-driven revenue streams that often lack historical comparables or stable cash flow patterns (Brynjolfsson & McAfee, 2014; Caliskan et al, 2021; Marrone & Hazelton, 2019). Traditional valuation methods, largely grounded in tangible asset analysis and past financial performance, may therefore fall short in capturing the full economic potential of digitally enabled firms (Lev, 2019; Levy, 2023; Frensidy et al., 2020). The process of determining the economic worth of a business or its components is complex and multifaceted, requiring robust methodologies that can adapt to diverse contexts and evolving market dynamics. Over time, the academic literature on business valuation has advanced significantly, reflecting changes in financial environments, emerging trends, and the growing

complexity of intangible assets, technological integration, and lifecycle considerations. Moreover, these developments underline the growing need for valuation professionals to acquire forward-looking competencies, including technological literacy, strategic thinking, and the ability to interpret complex, non-financial indicators. Skills in understanding digital ecosystems, cybersecurity risks, and intellectual capital have become critical in generating robust and credible valuations in the digital era (IVSC, 2021). As such, the profession must adapt not only its methodological toolkit but also its human capital, ensuring that valuation practitioners are equipped to operate effectively in a technology-driven business landscape (Gómez et al., 2025).

The significance and novelty of this research are multifaceted. First, while the body of literature on business valuation has been growing (see Miciuła et al., 2020; Aluko & Amidu, 2005), many studies focus either on short-term trends or specific methodologies. This research diverges from existing studies by consolidating research from 1984 to 2024, capturing the intellectual and practical evolution of valuation practices and facilitating a nuanced understanding of its trajectory.

Second, with practical implications, this study contributes to the financial accounting literature by identifying best practices and common challenges associated with business valuation, enabling practitioners to refine their methodologies. It offers strategic insights for navigating complex valuation scenarios, such as those involving intangible assets or emerging markets. By emphasizing best practices and challenges, our research becomes directly applicable to professionals in the financial accounting field, providing actionable insights for valuing start-ups, addressing uncertainty in volatile markets, and incorporating non-traditional assets into financial models.

Moreover, by focusing on publication trends, influential authors, and citation networks, this research introduces a bibliometric perspective that is relatively underutilized in business valuation studies. This dimension adds novelty and impact, facilitating a clearer understanding of the intellectual structure and key contributors shaping the field. The following research questions guided this study:

RQ1: What are the publication trends over time?

RQ2: Which authorship, citation, and content have had the most influence on the literature pertaining to business valuation throughout the core clusters of the intellectual structure?

RQ3: What are the emerging trends and future directions in the field of business valuation?

Aligned with these research questions, the study outlines specific research objectives:

RO1: To provide a performance analysis of the year, country, subject, and document type of research from the period 2009–2023.

RO2: To comprehend the intellectual structure of the field by highlighting influential entities and their connections, aiding researchers and stakeholders in identifying pivotal contributors and potential research collaborators.

RO3: To explore insights into emerging research trends in the current literature, contributing to the development of a research agenda in the domain of business valuation.

2 THEORETICAL BACKGROUNDS

The term "business valuation" refers to the process of determining the value of an organization that intends to continue operating (Razali et al., 2022). This process necessitates an evaluation of the company, which requires the utilization of data that has been forecasted in the calculations. Recently, businesses have undergone significant changes, and they are now required to confront a number of challenges and circumstances that have never been seen before (Razali et al., 2022). Because of the dynamic nature of the business environment, in which risk is transformed into volatility, the values of businesses are subject to a relatively wide range of fluctuations (Razali et al., 2022). Business valuation comprises an assortment of procedures, analyses, and assessments that culminate in the estimation of a company's monetary value at a specific point in time (Mile,1984). The contemporary realities of the market economy and the process of globalization have led to the conclusion that the valuation of businesses is of fundamental importance for the processes that take place in the economy (Miciuła et al., 2020).

Previous research in business valuation within finance, conducted by Oyewo (2020), highlights its significance in assessing financial assets and liabilities; however, its applicability may be constrained by the availability of comparable entities and the unique attributes of individual businesses. Oyewo (2020) emphasizes its significance in assessing financial assets and liabilities, although its applicability may be constrained by the availability of comparable entities and the unique characteristics of individual businesses. Hanafizadeh et al. (2015) underscore the necessity of considering business models and other intangible assets, especially in sectors influenced by intellectual property and innovation. Corbey et al. (2019) advocate for the incorporation of life cycle models, such as the Hanks five-stage framework, to improve valuation precision by synchronizing assumptions with a company's developmental phase. Moreover, technological advancements and data analytics are revolutionizing conventional valuation methodologies. Li and Yu (2017) emphasize the application of community mining techniques to enhance valuation precision in intricate situations, such as mergers and acquisitions, whereas Bogatyrev (2018) investigates the capabilities of contemporary information systems in optimizing income-based valuation methodologies. Digital technologies positively influence the performance and value of SMEs by enhancing efficiency, enabling innovation, and supporting data-driven decision-making (Wang et al., 2023). In business valuation, these technologies act as key value drivers, contributing to both tangible outcomes, such as revenue growth, and intangible assets like intellectual capital. As a result, the level of digital maturity should be carefully considered when estimating an SME’s enterprise value. Behavioural factors and the perception of risk significantly influence investment decisions and, consequently, the profitability of those investments (Basana et al., 2024). In business valuation, these elements can affect both the expected cash flows and the discount rate applied, particularly through investor sentiment, risk aversion, and managerial biases. Therefore, understanding behavioural dynamics and risk attitudes is essential for accurately assessing a firm's value, especially under uncertain market conditions.

3 RESEARCH OBJECTIVE, METHODOLOGY AND DATA

Article search and selection

For the present bibliometric analysis, the Web of Science (WoS) was selected as the main dataset. The use of a multi-database approach, like integrating WoS with other top bibliometric databases, has been shown in previous studies to improve the comprehensiveness of literature reviews. This is achieved by expanding the review's purview and making sure it is carried out holistically (Braam et al., 2021). Furthermore, it offers insightful information that can direct

future studies (Hamilton, 2023). By analyzing publication trends and citation patterns, its functionality makes it possible to identify research gaps. Because the platform has extensive coverage that includes the social sciences, the humanities, and the sciences, it is particularly advantageous for reviews that cover a wide range of fields (Chen, 2018). This maximizes the effectiveness and relevancy of searches by enabling researchers to create precise queries that are suited to subjects or keywords (Mendes et al., 2022). Additionally, WoS offers sophisticated search features that researchers can utilize to find information. WoS has the breadth, depth, and accessibility that make it an essential resource for bibliometric analyses.

The keyword-based search strategy for this study was designed to identify relevant literature on business valuation. The initial search utilized the terms “business valuation” OR “valuation”, which returned 1,337 documents. A multi-step refinement and extraction process was then applied. First, duplicates and incomplete records were removed. Second, only items classified under Business, Finance, Economics, and Management categories were retained. Third, the document type was limited to journal articles, conference proceedings, and book chapters. Finally, a relevance check of titles and abstracts was conducted to exclude unrelated studies. Further screening to exclude irrelevant or insufficiently detailed entries resulted in the selection of 85 articles. This final compilation comprised journal articles, conference proceedings, and book chapters, ensuring a robust collection of scholarly works relevant to the research objectives.

The years 1984-2024 were selected for the systematic review of business valuation in order to reflect on the effects of significant economic crises and the emergence of new asset classes, such as digital assets, as well as the thorough development of valuation theories, methodologies, technological advancements, regulatory changes, and the transition from tangible to intangible asset valuation (Alsahan & AlZaidan, 2024; Ernst, 2022; Hanafizadeh et al., 2015). A flow diagram (Figure 1) has also been added to illustrate this screening and selection process.

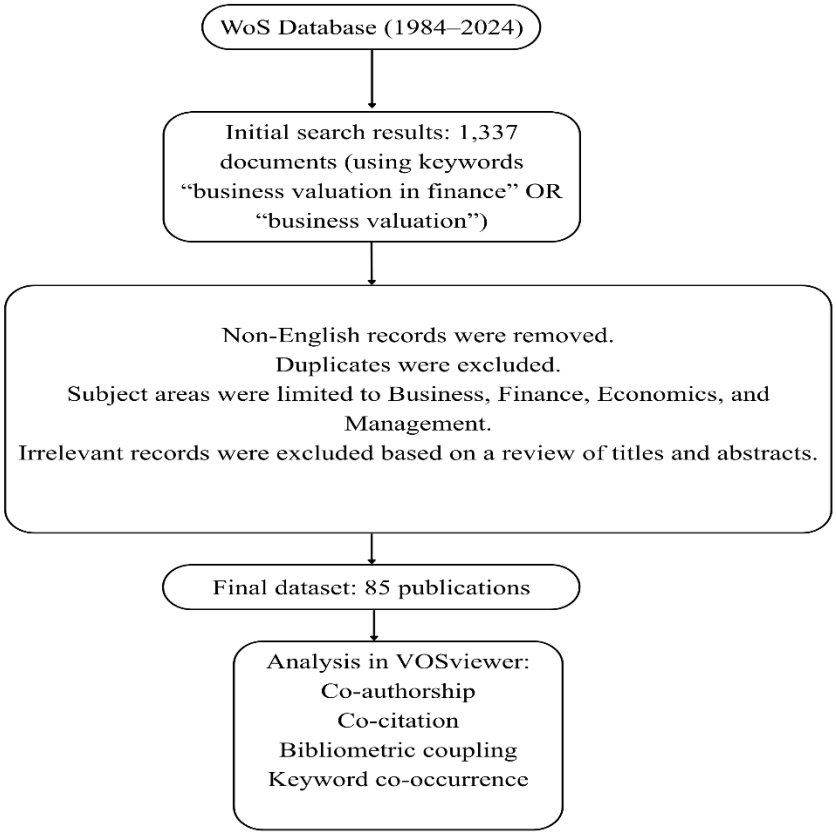

Fig. 1 – Research design. Source: own research

Bibliometric data analysis

Scholars employ bibliometric analysis for a variety of reasons, including the discovery of emerging trends in article and journal performance, patterns of collaboration, and research constituents, as well as the investigation of the intellectual structure of a particular domain in the existing body of literature (Donthu et al., 2021; Verma & Gustafsson, 2020). The bibliometric approach has gained significant popularity for conducting reviews, driven by advancements such as user-friendly software tools, cross-disciplinary techniques, and enhanced capabilities for analysing large datasets (Donthu et al., 2021).

This methodology is particularly valuable for assessing journal performance, mapping co-authorship networks, analysing co-citation patterns, and identifying major research themes within specific domains (Baker et al., 2020). In this study, we employed VOSviewer, a widely used bibliometric mapping and visualization software, to conduct keyword co-occurrence analysis, co-authorship analysis, and citation network mapping. VOSviewer was chosen because of its ability to process large bibliometric datasets and produce clear, interpretable visualisations of research trends. VOSviewer, a software that operationalized VOS, is commonly used in bibliometric and citation research. The units of analysis are journals, researchers, or individual publications, and co-citation, bibliographic coupling, and co-authorship are utilized to build and visualize bibliometric networks (Van Eck & Waltman, 2010).

4 RESULTS AND DISCUSSION

Publication Trends

During the beginning period (1984–1995), publication activity was very limited, resulting in a correspondingly low citation number. This indicates that the subject was either emerging or inadequately investigated during this timeframe. Beginning in the late 1990s and early 2000s, there is a discernible increase in the volume of publications, indicating heightened interest and research engagement. From 2010 to 2020, the volume of publications exhibited a significant rise, culminating in recent years, suggesting an intensified research focus and potential progress in the field. Citations exhibit a comparable pattern, albeit with a lagged acceleration, indicating that as publications proliferated, they garnered recognition and increasingly impacted subsequent research. Between 2020 and 2024, citations exhibit a significant increase, surpassing the rate of publication growth. This indicates that recent publications have exerted considerable influence, attracting notable attention and acknowledgment within academic and professional circles. This trend highlights the advancement and significance of the research field in recent years.

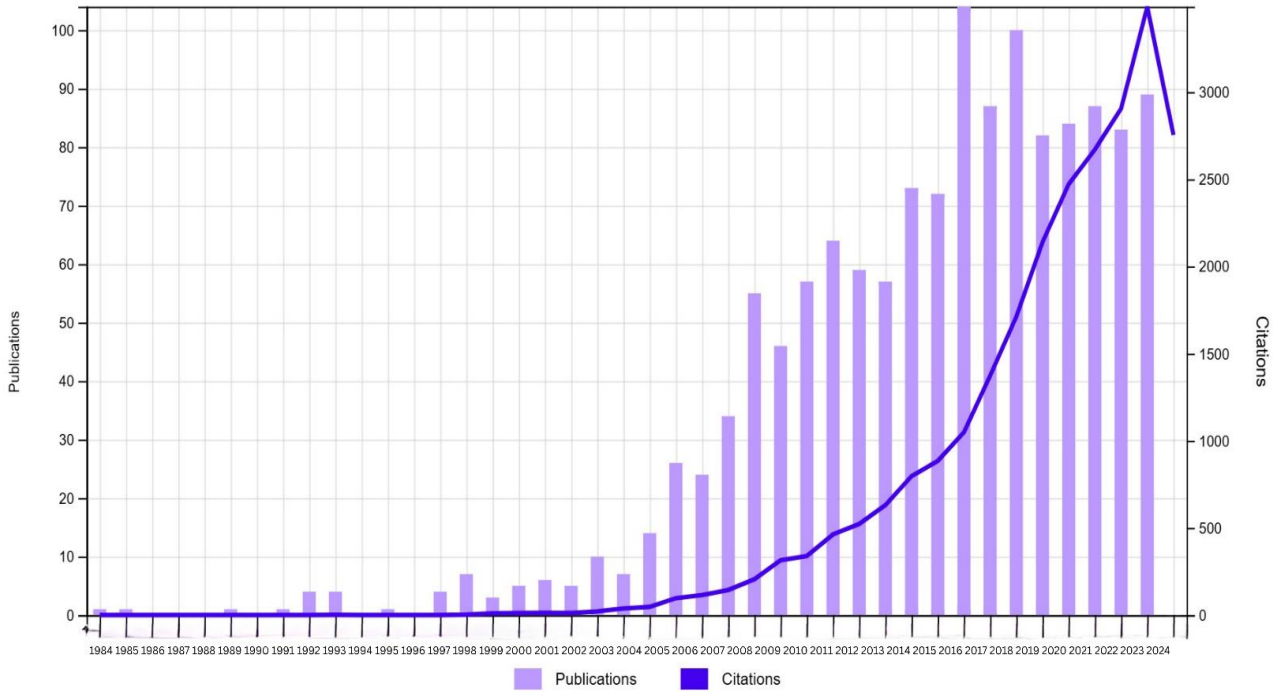

Fig. 2 – Publication trends from 1984 to 2024. Source: WoS Data, citation analysis

The chart illustrates the geographic distribution of research publications, with the United States clearly positioned as the leader. This substantial output highlights the nation's strong research infrastructure and ongoing commitment to progress in the field. After the United States, China and Germany exhibit significant contributions, indicating an increasing focus on research and development, albeit their output remains substantially inferior in comparison. England, Spain, and the Czech Republic exhibit moderate publication levels, signifying steady involvement in the field. Italy and Australia exhibit analogous contributions, indicating balanced yet less vigorous research activity. South Korea and India are also represented in the chart, indicating burgeoning interest and advancement in these areas. The chart illustrates the pre-eminence of

developed nations, especially the U.S., while emphasizing the growing involvement of countries such as China and India in global research initiatives.

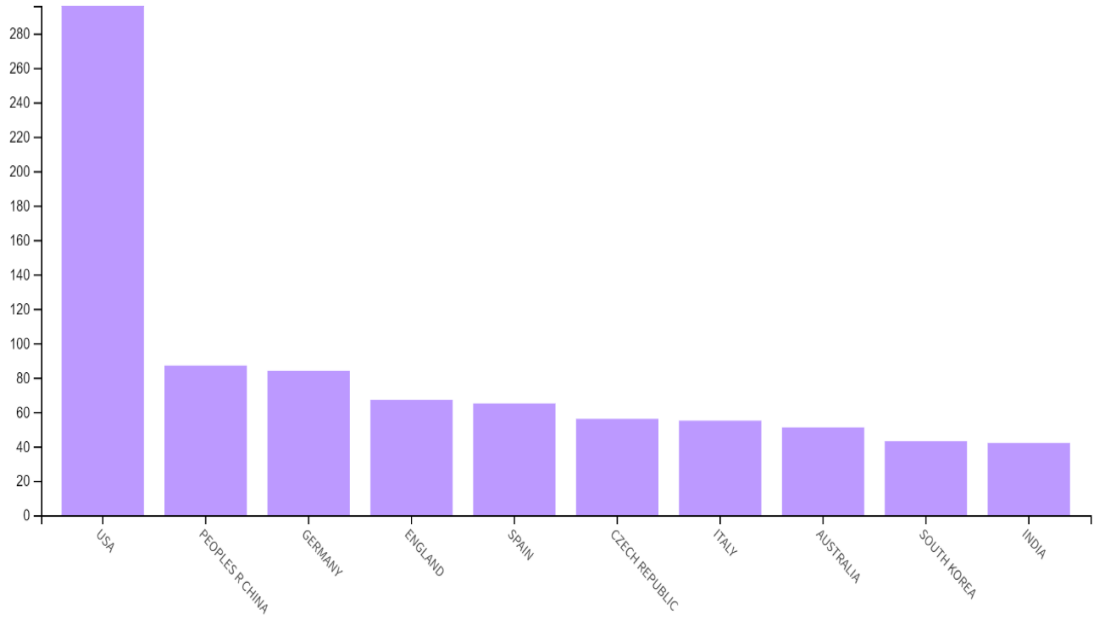

Fig. 3 – Publication by countries. Source: WoS Data, citation analysis

The table compares journal rankings by Chartered Association of Business Schools (CABS, also known as AJG) Rating and Australian Business Deans Council (ABDC) Rating, indicating academic prestige and impact. The Journal of International Business Studies has the highest CABS 4* and ABDC A* ratings, indicating its leadership in international business. The Journal of Business Ethics and the Journal of Banking & Finance are also CABS 3 and ABDC A*, indicating their strong reputations and influence in business ethics and finance. The Journal of Cleaner Production, which addresses sustainability and environmental practices, is CABS 2 and ABDC A*, indicating its importance in sustainability research despite not reaching the highest CABS category. Other CABS 2 journals like the Journal of Intellectual Capital and Issues in Accounting Education have ABDC ratings of A, indicating moderate impact in their fields. The Journal of Applied Corporate Finance and Journal of Property Investment & Finance have CABS ratings of 1 and 2 and ABDC ratings of B, indicating a niche focus or lower academic impact. Journal of Risk and Financial Management is not listed in either ranking system, suggesting they are new journals or have not yet been recognized by academic rating systems. The table shows that journal quality and impact vary from well-known to niche or emerging publications.

Tab. 1 – Top 10 journal publisher, ABS, ABDC ranking and documents.

Source	CABS Ranking	ABDC Ranking	Documents
Journal of Business Ethics	3	A*	15
Issues in Accounting Education	2	A	13
Journal of Banking Finance	3	A*	12
Journal of Applied Corporate Finance	1	B	11
Journal of Intellectual Capital	2	A	9
Journal of International Business Studies	4*	A*	9
Journal of Property Investment Finance	2	B	9
Journal of Risk and Financial management	Not ranked	Not ranked	9
Journal of Cleaner Production	2	A*	8

Source: own research

(Note: The ABS rankings range from 1 (lowest) to 4 (highest), while the ABDC rankings range from C (lowest) to A (highest)*)*

Pattern of citation and authorship

Table 2 presents an analysis of country co-authorship in publications, showcasing the number of publications and citations attributed to each country. The United States leads both in the number of publications (17) and citations (277), reflecting its strong global collaboration and significant impact on academic research. Despite having only 3 publications, the United Kingdom has received no citations, indicating a potential lag in the visibility or impact of its contributions. Several countries, including Russia, China, the Czech Republic, and Germany, each contributed 7 publications. Among these, Germany stands out with 35 citations, showcasing the high academic impact of its research, while Lithuania follows closely with 33 citations from the same number of publications. In contrast, Russia and the Czech Republic have received comparatively lower citations (6 and 4, respectively), suggesting moderate influence in the research landscape.

Italy, Vietnam, and Canada each contributed 4 publications. Canada outperforms with 24 citations, indicating strong research impact relative to its publication count. Italy has garnered 9 citations, while Vietnam trails with only 2, suggesting lower visibility or relevance of its research contributions. Overall, the data highlights significant variability in the academic influence of countries, with the USA, Germany, and Lithuania demonstrating strong citation impact, while others, such as the UK and Vietnam, exhibit limited citation performance despite their involvement in collaborative research.

Table 3 shows authors' co-authorship, citations, and research network link strength. Bontis, N. has 13 citations and a link strength of 4, indicating a strong impact and network connectivity from two collaborative efforts. Kim N. has the most collaborations (3), but only 2 citations, suggesting lower research visibility or impact despite active co-authorship. With 17 citations each, Gneiser, M., Heidemann, J., Klier, M., and Landherr, A. contributed to one collaborative effort but had significant individual impact. This shows their high-quality or relevant

contributions despite limited co-authorship. Lancova, B. has one collaboration with 8 citations, indicating moderate impact. Despite a consistent link strength of 4, Brailsford, T., Dash, S., and Hutchinson, M. have only collaborated once and cited once. This implies that these authors are connected within their networks but have little influence or recognition. As can be seen, co-authors have different levels of impact, with some having significant citation impact despite fewer collaborations and others having extensive collaboration but limited research influence.

Tab. 2 – Countries co-authorship. Source: own research

Country	**Publication**	**Citation**
USA	17	277
UK	3	0
Russia	7	6
Italy	4	9
China	7	3
Vietnam	4	2
Canada	4	24
Czech Republic	7	4
Germany	7	35
Lithuania	7	33

Tab. 3 – Author´s co-authorship. Source: own research

Authors	**Numbers of collaborative efforts**	**Citations**	**Link strength**
Bontis,N	2	13	4
Brailsforrd, T	1	1	4
Dash, S	1	1	4
Gneiser,M	1	17	4
Heidemann,J	1	17	4
Hutchinson,M	1	1	4
Kim,N	3	2	4
Klier,M	1	17	4
Lancova,B	1	8	4
Landherr,A	1	17	4

McMaster University and Lakehead University each have 2 publications with 13 citations and a link strength of 1. This indicates moderate research impact and academic network connectivity. Kaunas University of Technology and University of Zilina have high citation impact per publication. Kaunas University has 20 citations and the University of Zilina 25 citations, demonstrating their research's relevance and influence. Both institutions have published twice. Despite this, both institutions have a link strength of 0, indicating little collaboration.

However, Grant Thornton Business School, Kent State University, Nuertingen Geislingen University, University of Calabria, Econ University, and the University of Economics Ho Chi Minh City each contributed 2 publications but had lower citation impacts, ranging from 0 to 5. A similar link strength of 0 indicates minimal collaboration in broader research networks. These

findings show institutional disparities. The University of Zilina and Kaunas University of Technology have high citation counts and academic influence, but others have limited recognition or connectivity despite similar publication activity. The effectiveness of research dissemination and collaboration varies across institutions.

Tab. 4 – Top 10 publications by organization. Source: own research

Organization	**Number of publications**	**Citation**	**Link strength**
Lakehead University	2	13	1
McMaster University	2	13	1
Grant Thornton Business School	2	0	0
Kaunas University of Technology	2	20	0
Kent State University	2	2	0
Nuertingen Geislingen University	2	5	0
University of Calabria	2	2	0
Econ University	2	2	0
University of Economics Ho Chi Minh City	2	2	0
University of Zilina	2	25	0

Table 5 shows the dataset's most cited authors, and their citation counts and link strength, indicating their academic research network influence and connectivity. Matschke, M. is the most influential author with 16 citations and 116 link strength, indicating a strong research presence and extensive connections. Olbrich, M. and Hering, T. also have high connectivity, with 8 citations and a link strength of 88 for Olbrich and 11 citations and 61 for Hering, indicating their network impact. A. Damodaran leads in total citations with 24 but has a low link strength of 26, indicating significant influence but limited network integration. Marik, M., with 13 citations and 22 links, has moderate influence and connectivity. Pratt, S., Penman, S., and Kislingerova, E. have lower citation counts (6–9) and moderate link strength, indicating a niche but relevant academic presence. Ohlson, J. and Fama, E. followed a similar pattern with 6 and 12 citations and 15 and 10 link strengths. The table shows that while Matschke and Olbrich have high citation counts and strong network integration, Damodaran has significant citation impact but less collaborative or network engagement. The most referenced authors in the field vary in influence and connectivity.

The table shows the most cited documents, their citation counts, and link strengths, reflecting their impact and connectivity in the academic research network. The document by Marik (2007) has the most citations (5 citations, 6 link strength), indicating its influence and field connectivity. Also highly cited is Damodaran (2012), with 4 citations and a link strength of 5, demonstrating its impact on research. Feltham (1995), Markowitz (1952), Matschke (2010), Modigliani (1958), and Liu (2002) each had 3 citations and a link strength of 5, indicating moderate influence and integration in the research network. These foundational works advance finance and valuation theory. With 4 and 3 citations, Marik (2011) and Ohlson (1995) are also relevant, but their link strengths are lower (4), indicating a narrower academic discourse (Table 6).

Tab. 5 – Most referenced authors. Source: own research

Cited authors	Citations	Link strength
Matschke,M	16	116
Olbrich,M	8	88
Hering,T	11	61
Damondaran,A	24	26
Marik,M	13	22
Pratt,S	9	21
Penman,S	7	18
Kislingerova,E	6	17
Ohlson,J	6	15
Fama,E	12	10

Tab. 6 – Most referenced documents. Source: own research

Cited references	Citation	Link strength
(Feltham,1995)	3	6
(Marik,2007)	5	6
(Liu,2002)	3	5
(Markowittz,1952)	3	5
(Matschke,2010)	3	5
(Modigliani,1958)	3	5
(Damodaran,2012)	4	5
(Marik,2011)	4	4
(Ohlson,1995)	3	4

The network visualization demonstrates the sources of co-citation by displaying the connections and relationships between scholarly journals and publications frequently cited together. The network presents the interconnectedness of research in finance, management, accounting, and economics by showcasing how various academic fields and research areas converge through co-citation patterns. Figure 3 displays discrete clusters, each denoted by a different colour, signifying collections of frequently co-cited sources. In the operational and managerial research domains, for instance, "Betrieb Forsch Prax" and "European J Oper Res" are central to one cluster, indicating their strong influence and interconnectedness. Likewise, "Journal Finance Econ," "Econometrical," and "Am Econ Rev" comprise yet another notable cluster, highlighting their importance in the domains of economics and finance Accounting Res," "Account Rev," and "J Finance Manage" are important sources in the literature on accounting and financial management, and they are the focus of another cluster. Because of their shared emphasis on financial and managerial issues and their relevance, these journals frequently appear together in citations. Moreover, publications such as "Strategic Manage Journal" and "Harvard Business Review" establish connections with other journals that link management science and economic research, thereby bringing them closer to the domain of management and strategic studies. The graph emphasizes the supporting but crucial function of sources like "Investment Valuation," which have fewer direct connections to the larger financial and valuation literature than do core journals.

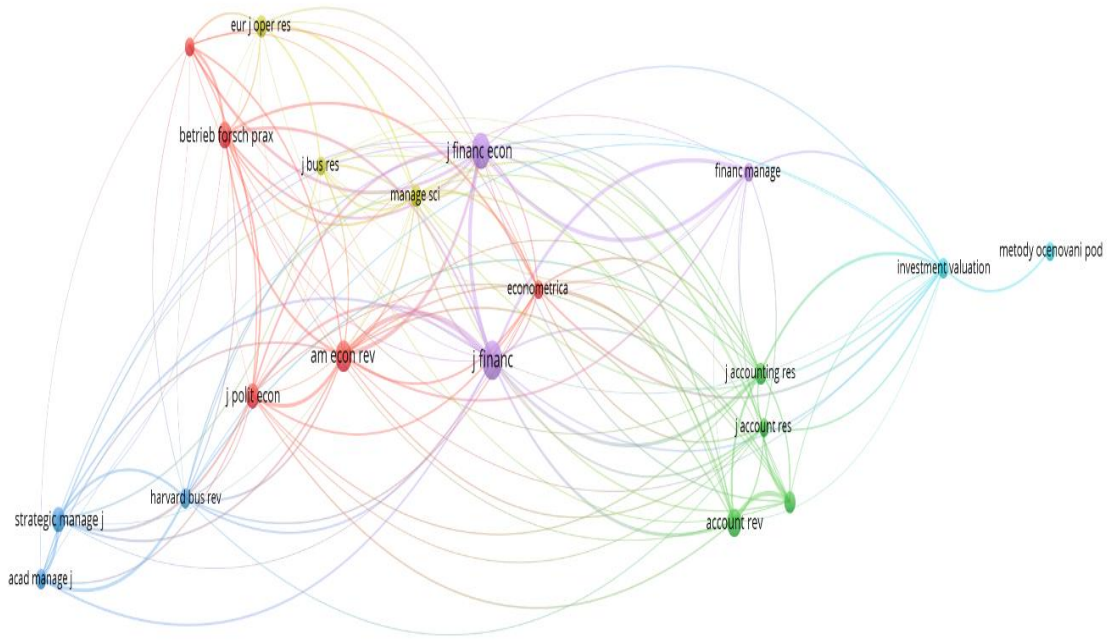

Fig. 4 – Source of co-citation. Source: own research

The network visualization highlights bibliometric coupling, showcasing authors connected through shared references in their published works. The clusters represent groups of researchers with significant thematic or intellectual overlap in their citations, indicating shared areas of focus. At the centre of the network, Kim Duc Nguyen emerges as a key node, serving as a bridge between multiple clusters and suggesting a pivotal role in connecting diverse research areas. Similarly, Dietmar Ernst, Ceslovas Christauskas, and Petra Gavlaková are influential within their respective clusters, reflecting their strong contributions to specific academic themes. The peripheral nodes, such as Christine Botosan and Birutė Galinienė, show specialized areas of research with fewer connections to the broader network, indicating niche or highly focused studies. This visualization underscores the collaborative and interconnected nature of academic research, highlighting how certain authors act as central figures linking related fields, while others contribute depth in more specialized domains. (Figure 4)

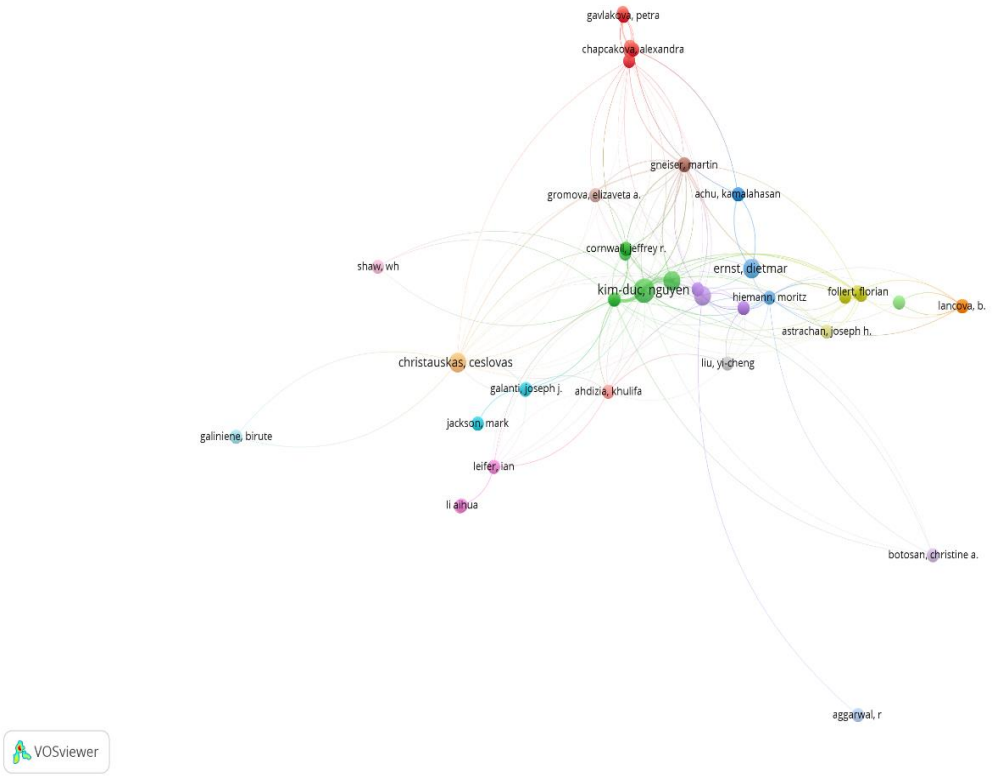

Fig. 5 – Bibliometric coupling. Source: own research

The visualization illustrates the co-citation network of cited references, highlighting the relationships between frequently co-cited works and their influence within academic research. Central to the network are Damodaran's works (2012), which serve as foundational references in investment and valuation studies, bridging multiple clusters and reflecting their broad applicability across various research areas. Similarly, Marik's publications (2007, 2008) form a prominent cluster, particularly in valuation methodologies, indicating their significant impact within specialized domains. The works of Markowitz (1952) and Modigliani (1958) also feature prominently, showcasing their enduring influence on financial theory, particularly in portfolio management and capital structure. Other notable contributions, like Amram (1999) on real options and Pratt & Shannon (2008) on valuation, though less central, connect to key nodes, emphasizing their importance in specific subfields. The clusters in the network represent distinct thematic areas, such as foundational investment principles, advanced financial modeling, and valuation techniques, while the connections between these clusters highlight interdisciplinary overlaps. Foundational theories, like those of Markowitz and Modigliani, continue to underpin contemporary research, linking historical contributions to modern applications. This visualization underscores the interconnectedness and evolution of research in finance and valuation, with central works like those of Damodaran and Marik shaping the theoretical and practical advancements in the field (Figure 5).

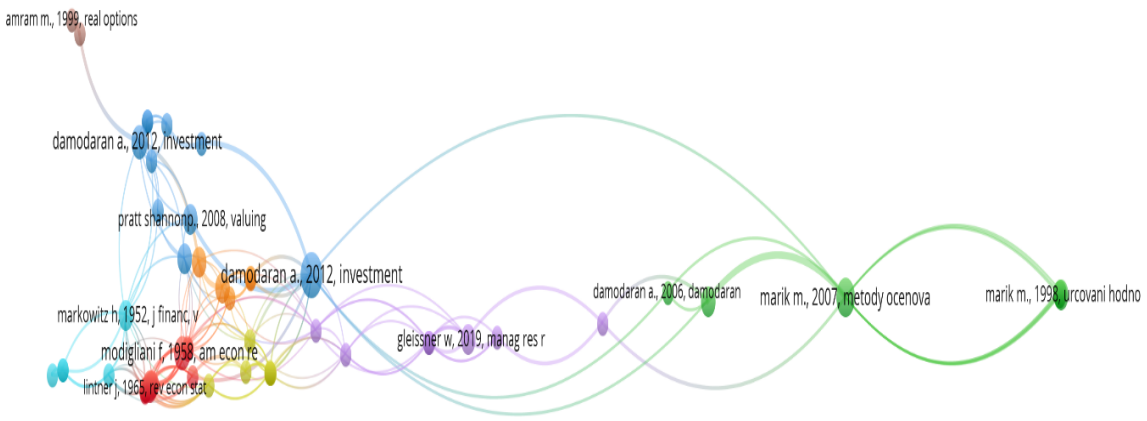

Fig. 6 – Co-Citation Cited References. Source: own research

Key words analysis

The visualization displays a co-occurrence network of business valuation-related keywords, demonstrating the field's major research areas' thematic organization and interrelationships. Business valuation is the main node at the centre of the network, acting as the link between a number of separate but connected clusters. With a focus on uncertainty and frameworks for decision-making in valuation contexts, the blue cluster emphasizes risk-oriented subjects like risk valuation, real options analysis, and venture businesses. This cluster demonstrates the importance of risk assessment as a pillar of valuation theory and practice.

The green cluster focuses on management and performance-related themes, incorporating keywords such as strategy, innovation, and competitive advantage. This cluster emphasizes how strategic positioning and organizational dynamics shape valuation methodologies. Similarly, the yellow cluster underscores the incorporation of financial theory into practical valuation scenarios, utilizing concepts such as the income approach, bankruptcy, and investment. With terms like cost of capital, cash flow, returns, and equity valuation, the red cluster explores quantitative approaches and financial indicators. This cluster highlights the dependence of financial metrics on accuracy and the significance of technical rigor in valuation calculations. Contrarily, the orange cluster focuses on procedural reliability, as evidenced by terms like firm valuation and consistent valuation that imply the need for standardized and repeatable valuation procedures.

Finally, the purple cluster incorporates concepts like assets, equilibrium, and Monte Carlo simulation and concentrates on theoretical and computational approaches. This cluster demonstrates the application of modelling methods and fundamental economic concepts to valuation procedures. These clusters' interconnectedness presents the interdisciplinary nature of business valuation research. (Figure 6)

In figure 7, with interrelated themes that reflect its multifaceted nature, the density visualization emphasizes the importance of business valuation as the primary area of study. Keywords like

"venture businesses" and "real options analysis" on the left highlight risk assessment and frameworks for making decisions, especially for high-risk or start-up businesses. Besides the main point, business valuation standards emphasize how crucial formal guidelines and consistency are to guaranteeing the dependability and comparability of valuation procedures. The subthemes "market value," "strategic analysis," and "business connect valuation" on the right are associated with approaches that are driven by the market and strategy. However, phrases like "income approach" and "cost of capital" highlight the methods' rigor and the significance of financial modelling for valuation frameworks. By fusing fundamental concepts with cutting-edge fields of study like risk management, standardization, strategic alignment, and quantitative precision, these groups demonstrate an organized approach to the field. This demonstrates how business valuation research is becoming more and more challenging over time.

Table 10 displays the most frequently used top ten index keywords in business valuation research, along with their frequency and the strength of their links. These factors reflect the significance of these keywords and the interconnectedness that exists within the field. Business valuation is the keyword that appears the most frequently, with a total of 21 occurrences and a link strength of 8.00. This indicates that it plays a fundamental and central role in the research landscape. Valuation follows, with eight occurrences and a link strength of four per thousand, indicating its strong association with the primary research focus. There are a number of other keywords that appear twice, each with a link strength of 2.00. These keywords include investment, market value, real options analysis, strategic analysis, and venture businesses. These terms place an emphasis on various aspects of business valuation, including financial methodologies, market-based assessments, decision-making under uncertainty, and strategic perspectives, among others. Additional keywords like "business", "business valuation standards", and "company" appear twice, but their link strengths are lower (1.00), indicating their greater relevance as supplementary topics rather than central themes.

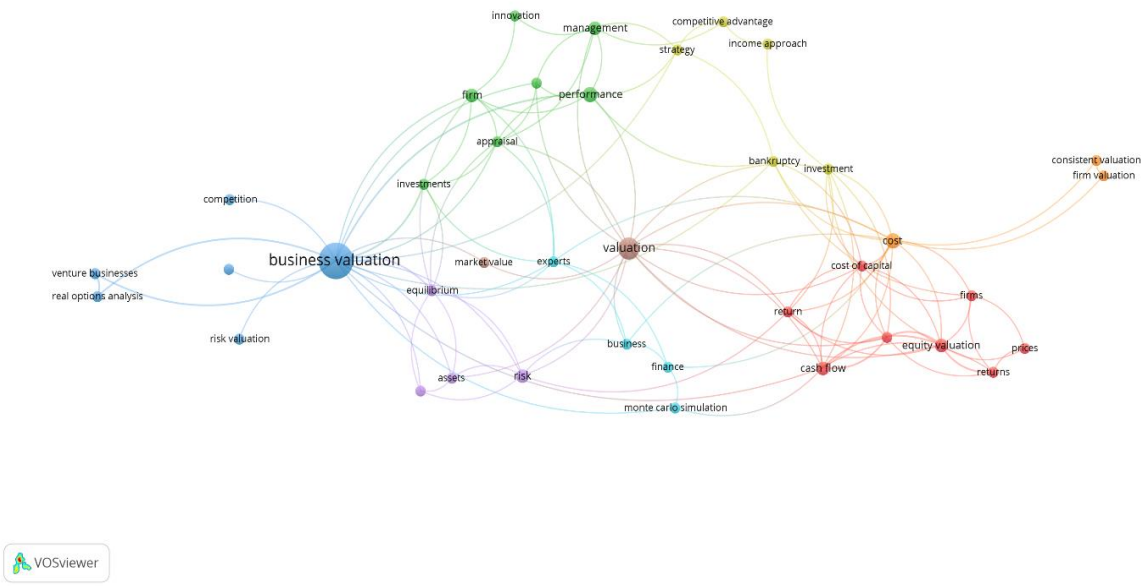

Fig. 7 – Visualized co-occurrence network by all key words. Source: own research

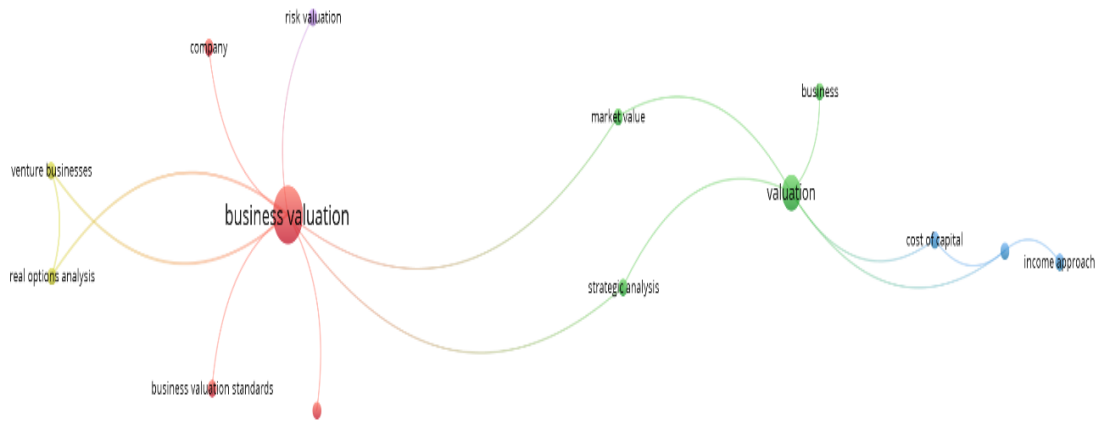

Fig. 8 – Density Visualization of author Keywords. Source: own research

Tab. 7 – Top 10 most frequent index keywords. Source: own research

Key words	**Number of occurrences**	**Link strengh**
Business valuation	21	8.00
Valuation	8	4.00
Investment	2	2.00
Market value	2	2.00
Real options analysis	2	2.00
Strategic analysis	2	2.00
Venture businesses	2	2.00
Business	2	1.00
Business valuation standards	2	1.00
Company	2	1.00

The overlay visualization network provides a bibliometric analysis of research topics within the field of business valuation, illustrating the temporal evolution of key themes from 2010 to 2020. The central node, business valuation, serves as the primary focus of the network, reflecting its foundational role and strong interconnectedness with various subfields. Surrounding this core, topics such as valuation, cost of capital, cash flow, and equity valuation are highlighted as essential components of the field, with their prominence spanning the entire period under review. Earlier research efforts, indicated by blue and purple nodes, focus on areas such as risk valuation, venture businesses, and real options analysis, showcasing the initial emphasis on uncertainty and valuation methodologies for high-risk scenarios. These early contributions laid the groundwork for more recent advancements. Green and yellow nodes, representing contemporary research trends, highlight the increasing integration of strategic dimensions, with keywords such as strategy, management, competitive advantage, and innovation gaining

prominence. These topics reflect the field's shift towards aligning valuation practices with organizational performance and strategic decision-making. Additionally, emerging themes such as consistent valuation and return, depicted in lighter colors, indicate a growing focus on the standardization of valuation practices and the refinement of financial metrics in recent studies. The network demonstrates the dynamic and interdisciplinary nature of business valuation research, evolving from foundational financial methodologies to more complex, strategy-driven approaches that address contemporary business and market challenges.

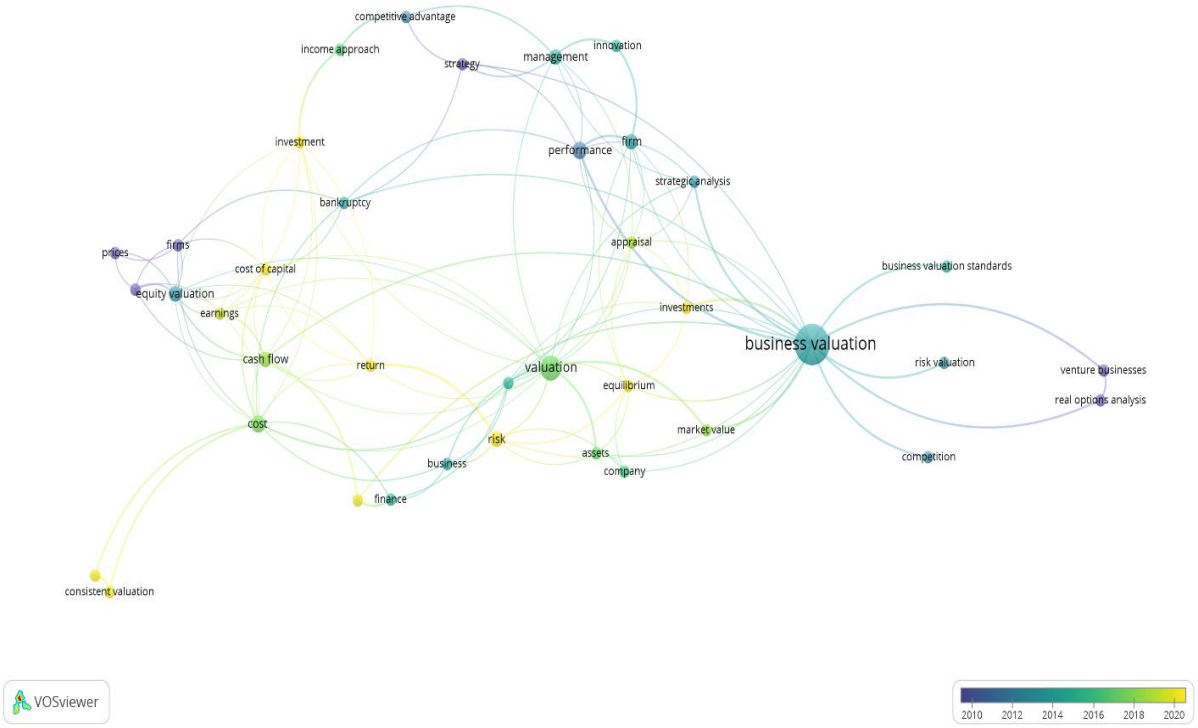

Fig. 9 – Overlaying the visualization network of research topics. Source: own research

Discussion

The results of the analysis indicate that research in business valuation has experienced steady and significant growth, with a marked acceleration after 2010. This finding directly addresses Research Question 1 (RQ1), confirming that the volume of publications has increased in line with rising market complexity and advances in valuation methodology (Damodaran, 2012). The surge reflects a growing demand for robust valuation techniques capable of addressing dynamic business environments, particularly those shaped by globalization, digital transformation, and intangible asset accumulation.

Despite differences across sectors, the literature reveals a convergence around core financial variables that can be effectively applied through valuation multiples. The increased citation impact in areas such as risk analysis, quantitative financial modeling, and strategic valuation further underscores the importance of these domains (Markowitz, 1952; Modigliani & Miller, 1958). For example, Markowitz's (1952) theory on diversification and the efficient frontier remains central to understanding how risk-adjusted expectations influence company multiples.

Similarly, Modigliani and Miller (1958) emphasized that firm value is driven more by earning power and asset risk than by capital structure—reinforcing the emphasis on fundamental performance drivers in valuation research.

Geographically, the United States, Germany, and China emerge as dominant contributors to the field, as demonstrated by co-authorship and citation analyses. These countries not only produce high-impact research but also exhibit strong international collaboration networks. Meanwhile, countries with fewer publications but high citation averages—such as Lithuania—illustrate that academic influence is not solely dependent on volume but also on research quality. This addresses Research Question 2 (RQ2), by identifying influential authors, institutions, and the intellectual structure of the field. Notably, scholars such as Aswath Damodaran and Martin Matschke are repeatedly cited as key thought leaders (Damodaran, 2012; Matschke & Brösel, 2010). Their work provides both theoretical underpinnings and applied frameworks that remain highly relevant across diverse valuation contexts. Matschke and Brösel (2010), in particular, have contributed significantly by promoting context-driven valuation models that account for strategic objectives such as mergers, acquisitions, and financial reporting.

In addition, Liu, Nissim, and Thomas (2002) provide empirical evidence supporting the superiority of forward earnings-based multiples over traditional book value or sales multiples in explaining stock prices, emphasizing the importance of forward-looking indicators in contemporary valuation practices. Keyword clustering and reference mapping reveal several core thematic areas in the literature, including cost of capital, cash flow analysis, income approaches, risk-based assessment, and strategic evaluation methods. At the same time, emerging themes such as real options analysis and venture valuation highlight the discipline’s responsiveness to modern challenges (Hering et al., 2002). These findings confirm the growing integration of risk, strategy, and technology into valuation models. Matschke and Brösel (2010) further argue that valuation must evolve to address digital transformation, technological disruption, and contextual specificity.

The integration of artificial intelligence and simulation-based methods (Ernst, 2022; Alsahan & AlZaidan, 2024) illustrates the field's innovation trajectory, offering adaptable, high-accuracy models suitable for complex valuation environments. These techniques reduce forecasting error and enhance the predictive power of valuation systems, particularly in high-uncertainty sectors such as RFID, biotech, and fintech.Recent keyword and trend visualizations also demonstrate a shift toward incorporating strategic and managerial perspectives into valuation research. The increasing prominence of terms such as "competitive advantage," "strategy," and "innovation" reflects the evolution of business valuation from a purely financial tool to a strategic decision-making instrument (Penman, 2012; Pratt, 2008). Moreover, the growing attention to valuation standardization and consistency through terms such as "business valuation standards" aligns with international efforts toward harmonized financial reporting (Feltham & Ohlson, 1995).

In line with these developments, researchers are increasingly focused on valuation topics that extend beyond traditional finance. This includes attention to intangible assets (Lev, 2001), sustainability-linked valuation (Eccles et al., 2014; Koller et al., 2020), and the impact of digital transformation on valuation frameworks (Balcerzak et al., 2023). This body of work responds to Research Question 3 (RQ3) by mapping emerging research frontiers and forecasting the discipline’s trajectory toward multidisciplinary integration. The future of business valuation research lies in further integration of Environmental, Social, and Governance (ESG) metrics, AI-enhanced prediction models, and non-financial performance indicators. Scholars emphasize the need to embed such elements into existing frameworks to better reflect stakeholder value,

strategic adaptability, and long-term sustainability (Brynjolfsson & McAfee, 2017). This transition signifies a paradigm shift in business valuation from a static, financially focused exercise to a holistic, multidimensional discipline at the intersection of finance, strategy, technology, and sustainability (Damodaran, 2012; Matschke & Brösel, 2010).

Research implications

The findings of this bibliometric study have important theoretical implications for business valuation research that wants to move forward. This study finds important authors, important works, and main thematic groups like financial modelling, strategic analysis, and risk assessment by mapping the intellectual structure of the field. These insights lay the groundwork for future research that will build on existing frameworks and fill in gaps in areas like valuing intangible assets and thinking about sustainability. The study also talks about how strategic ideas like competitive advantage and innovation can be used in valuation methods. It stresses the need for a multidisciplinary approach that links valuation to the bigger picture of how organizations and markets work. These results make researchers want to look into how traditional financial theories connect with new areas like global standardization and valuation based on technology.

The study gives us useful information for improving how we value businesses and make decisions. The focus on consistent valuation and business valuation standards shows how important it is to have reliable and consistent methods that professionals can use across industries and regions to make sure that results are comparable and trustworthy. The fact that valuation is combined with strategic factors also shows how important it is as a tool for making organizational decisions, helping people figure out how to best innovate, position themselves in the market, and make investments. Improvements in computer methods, such as risk modelling, provide useful tools for dealing with uncertainty and making valuation predictions more accurate. Also, because intangible assets like intellectual property and sustainability metrics are becoming more important, professionals need to come up with new ways to evaluate these non-traditional assets. Together, these results show how practitioners can make valuation processes more useful, accurate, and strategic in fast-changing, globalized business settings. In sum, the study reveals that business valuation is no longer a static, backward-looking process but a dynamic, future-oriented discipline. By linking valuation to competitiveness, the findings encourage researchers and practitioners to reframe valuation as a strategic capability one that supports innovation, sustainable growth, and long-term value creation in a fast-evolving global economy (Damodaran, 2012; Matschke & Brosel, 2010).

4 CONCLUSIONS

This bibliometric study provides a comprehensive analysis of business valuation, focusing on publication trends, intellectual structure, and emerging directions. The steady growth in research output over the past two decades, particularly after 2010, underscores the increasing significance of business valuation in contemporary financial markets. Core themes such as financial modelling, strategic analysis, and risk assessment remain central to the literature, while advancements in methodologies are evident in areas like real options analysis, cost of capital, and income approaches. Business valuation is undergoing a transformation, increasingly incorporating strategic dimensions such as innovation and competitive advantage, thereby evolving from a purely financial practice to a critical tool for organizational strategy and decision-making. This study offers a roadmap for academics and practitioners to develop interdisciplinary approaches and refine valuation methodologies to address modern business and market challenges. These findings reaffirm the dynamic and evolving nature of business

valuation, emphasizing its critical role in both theoretical advancements and practical implementations.

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