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Bibliometric Analysis of Intangible Assets Research, Extending to Their Value-drivers Landscape

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Abstract: Study aims to map the overall state of research on intangible assets and their value drivers. A secondary objective is to evaluate the magnitude of scientific blind spot with provision of empirical support. The analysis utilized 146 articles published in English from the Scopus and Web of Science database, focusing on key metrics like publication volume, authorship, and thematic trends. The results suggest that this research area may remain underexplored, as the most productive year yielded only 13 publications. The results further indicate that the highest publication output originates from the United States, Italy, and the United Kingdom. The cluster analysis indicates that intangible assets are most frequently examined in relation to value creation in digital economy, also corporate behavior and firm performance, as well as within the domain of knowledge- and data-driven management. Although the results point to limited scholarly coverage within this thematic domain, a notable increase in research interest and a gradual narrowing of existing research gaps can be anticipated, driven by the generally growing discourse on knowledge-based economies. Furthermore, continuing emergence and availability of data sources capable of supporting the identification and quantification of non-financial determinants relevant to intangible asset valuation can be expected.

Keywords: non-financial influence; market value; knowledge economy; bibliometric analysis

JEL Classification: O34; G32

1. Introduction

As an introduction, insights from the following ten highly influential studies indexed in Web of Science are first reviewed. These studies collectively underscore that intangible assets (and value-drivers) remain insufficiently conceptualized, while simultaneously emphasizing their critical role in the creation of firm value. A brief overview of the key issues addressed within this research area is presented below.

Intangible assets, including intellectual property such as patents and trademarks, have become central to achieving and sustaining competitive advantage and represent an important determinant of corporate profitability. At the same time, these assets provide multinational enterprises with significant scope for profit reallocation, largely as a result of opaque transfer pricing mechanisms (Dischinger, 2011).

Another study proposed a set of seven operational knowledge assets, representing an initial effort to address the limited understanding of which knowledge-based resources managers must effectively exploit at the most granular operational level (Andreou, 2007).

Another strand of literature has focused on the role of intangible assets in a distinct organizational context. Meaning in the context of mergers and acquisitions, brands often represent a substantial yet variable share of total deal value. While existing marketing research primarily examines the determinants of brand-related financial value under stable ownership conditions, M&A transactions introduce additional complexity, as brand value is influenced by the extent to which acquiring firms are able to effectively exploit and integrate the acquired brands (Bahadir, 2008).

Beyond the specific context of mergers and acquisitions, prior research has also examined other categories of intangible assets and their implications for firm-level outcomes. Study based on a dataset of 452 firms demonstrated that human capital efficiency represents the primary determinant of a robust corporate reputation, while also enabling the attribution of specific intellectual capital components to a range of financial performance indicators (Ginesti, 2018).

Another stream of literature has addressed intangible assets from a different analytical perspective. Intangible assets are of particular relevance to transfer pricing, as subsidiaries lacking intangible property exhibit a lower propensity to engage in profit reduction compared to subsidiaries that hold intangible assets (Beer, 2015).

Related empirical evidence can be found in studies examining corporate tax behavior in a broader organizational setting. Evidence based on a sample of 200 Australian firms indicates that tax havens are more frequently utilized by companies that extensively engage in transfer pricing practices, hold significant intangible assets such as patents and brands, operate as multinational enterprises, and employ performance-based managerial compensation schemes (Taylor, 2015).

In a different institutional and organizational context, attention has also been directed toward the accounting treatment of intangible assets. This study indicates that firms adopting a standardized and consistent accounting taxonomy for intangible assets are better able to recognize and record a broader range of intangible assets within their accounting systems (Green, 2005).

Beyond accounting-related considerations, prior research has also examined intangible assets in the context of broader firm-level attributes. Corporate reputation represents an intangible asset that exerts a direct influence on a firm's market value. It is formed through sustained ethical conduct and the consistent development of trust among key stakeholders, including customers, investors, employees, and business partners (Gaultier-Gaillard, 2006).

Additional non-financial aspects of firm behavior have been examined in related strands of the literature. Noteworthy non-financial factor concerns the geographic proximity of investors, as closer spatial ties between investors and firms are associated with more positive firm-level outcomes (Chang, 2020).

Further evidence has been provided in studies examining firm performance and value creation in alternative performance contexts. The findings indicate that firms may exhibit low

or even negative profitability; however, substantial investments in intangible assets and digital markets are associated with increasing equity market valuations (Balzer, 2020).

Again - due to the high level of abstraction surrounding intangible assets, the domain of non-financial performance has not yet been adequately conceptualized or operationalized. The vast majority of intangible asset studies concur on the existence of so-called value drivers—non-financial determinants that are considered relevant to asset valuation yet remain resistant to systematic standardization and harmonized measurement. Consequently, valuators continue to rely primarily on accumulated professional experience and on defensible value-driver assumptions that can be empirically or narratively justified within individual valuation engagements.

International valuation standards (IVS), as incorporated into International Financial Reporting Standards (IFRS), most commonly apply established approaches in which value drivers may be only indirectly or partially reflected, typically through discounted cash-flow models or market-based valuation methods using comparable asset transactions under sufficiently similar conditions. Addressing this gap is also relevant for capital market stability, particularly in relation to stock exchanges, where informational opacity contributes to asset overvaluation and bubble formation, and for transfer pricing practices, where non-standardized intangible valuation increases opportunities for tax-motivated asset relocation within multinational corporate groups.

To date, only one highly relevant empirical research stream has originated outside traditional academic environments, conducted by the U.S. research division of Ernst & Young. This series of studies achieved comparatively robust progress in quantifying non-financial performance signals of intangible assets. The first study documented that, at the time, managers across multiple sectors were frequently making strategic decisions under substantial informational uncertainty. The study also identified an explicit managerial demand for additional—preferably non-financial—indicators, reflecting a widespread belief that such effects were material, observable, and actively influencing firm performance, despite being omitted from formal valuation frameworks (Cohen, 2001).

The second study implemented a survey targeting senior managers from firms listed in the S&P 500 index, with the objective of identifying perceived value drivers of intangible assets. The analysis resulted in the definition of nine core drivers, including innovation intensity, employee relations, and other organizational performance signals (Cohen, 2001).

The third study assigned weights to the identified value drivers and further analyzed IPO (Initial Public Offering) valuations of newly listed firms. The difference between the initial IPO valuation and the firm's subsequent market valuation after a defined trading period was regressed against the survey-derived value drivers. This procedure was applied across 24 industry sectors in the United States (Gu, 2011).

2. Methodology

Bibliometric analysis is a systematic approach employed to detect and interpret structural and developmental patterns within scientific fields. It enables researchers to trace research trends across journals and articles, map collaborative networks, and identify core

and emerging topics within a defined knowledge domain. This method capitalizes on large-scale datasets—often comprising hundreds to thousands of records—to evaluate objective indicators such as citation impact, publication productivity, and keyword frequency. Complementarily, bibliometric analysis integrates interpretive components, including thematic synthesis and clustering, which are derived through reproducible and transparent analytical protocols. When rigorously implemented, the method can expose layered knowledge trajectories and subtle developmental inflections, even in well-established disciplines. By delivering a holistic and data-grounded representation of the field, bibliometric analysis contributes to disciplinary advancement through the identification of knowledge gaps and by stimulating novel research directions (Donthu et al., 2021).

2.1. Defining Searching Terms and Search Delimiting Criteria

In order to get relevant data from the Scopus database for this analysis, the following query string was formulated:

> *TITLE-ABS-KEY ("intangible asset*" AND ("valuation" OR "value" OR "pricing" OR "market value") AND ("driver*" OR "non-financial influence*" OR "nonfinancial influence*" OR "non-financial factor*" OR "nonfinancial factor*"))*

Which resulted in 175 documents. Subsequently, a set of predefined filters was applied to refine the results. The filtering criteria included language (English) and subject areas (Business, Management and Accounting; Economics, Econometrics and Finance). This further refined the search output to 134 documents.

Subsequently, bibliographic data were retrieved from the Web of Science database. Due to minor differences in search functionality compared to the Scopus database, the search query was adjusted to preserve an equivalent logical structure of the retrieval strategy.

> *TS = ("intangible asset*" AND ("valuation" OR "pricing" OR "market value") AND ("driver*" OR "non-financial influence*" OR "nonfinancial influence*" OR "non-financial factor*" OR "nonfinancial factor*"))*

That resulted in 40 documents and subsequent filters were also language (English) and categories (Management, Business, Business Finance, Economics) bringing results down to 32 documents.

Altogether, this resulted in a total of 166 documents; however, it was necessary to compare both datasets to identify overlapping records, which were subsequently removed to eliminate duplicates. A total of 20 duplicates were identified, resulting in a final dataset comprising 146 documents.

3. Results

3.1. Publications by Year

The results of the first methodological section present a descriptive analysis of a dataset comprising 146 documents, evaluated by their annual publication counts.

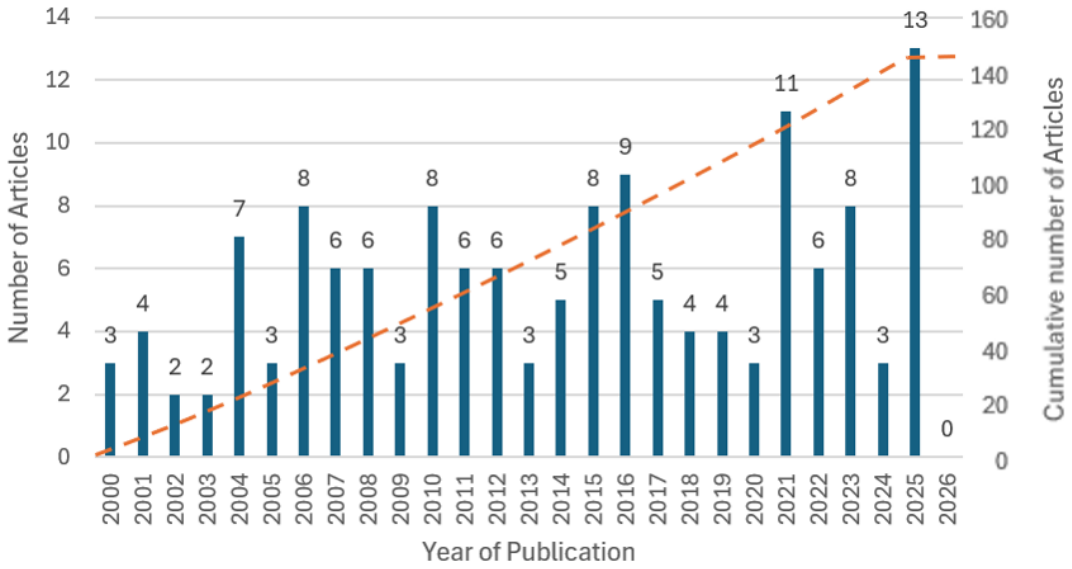

Figure 1. Cumulative and annual numbers of publications

In 2000, the first publications addressing this topic began to emerge, with a total of three articles published that year. Over the entire observation period, the average annual output was 5,6 articles. Although the relative year-to-year increases appear substantial, their impact in absolute terms remains limited. The highest number of articles on the subject was published in 2025 (13). Beyond this peak, the data demonstrates persistent long-term fluctuations, predominantly ranging between three and eight articles per year. When assessed in cumulative counts, the overall trend follows a second-order polynomial function. While the curve may initially resemble a linear trajectory, closer inspection reveals a slight but discernible inflection. Collectively, these findings may indicate that the topic of intangible assets and their value drivers is either insufficiently attractive to the research community or characterized by comparatively high publication barriers due to its conceptual and methodological complexity.

3.2. Publications by Country

Geographical distribution of publications on the topic of board diversity is further analyzed.

It should be noted that a subset of documents lacked an affiliation country after export from the Scopus database, reducing the sample size for this figure from 146 to 142 records. The highest publication output was observed in the United States (21 records, 14.79%), followed by Italy (17 records, 11.97%) and the United Kingdom (13 records, 9.15%). Beyond Germany (10 records, 7.04%) and India (6 records, 4.23%), all remaining regions—defined by their considerable heterogeneity—account for only marginal shares, reflecting negligible research activity on this topic. Overall, the results indicate that publication output in this domain is dominated by Anglo-Saxon countries and nations with comparable cultural and legal heritage.

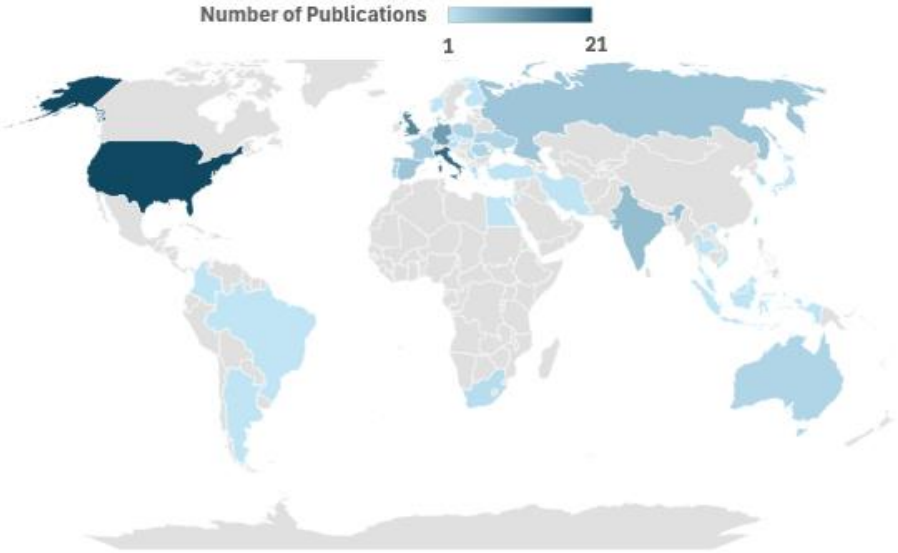

Figure 2. Publications by country

3.3. Leading Authors

We further examined the publication record at the author level to identify the most frequent contributors within this research domain.

Table 1. Top publishing authors by record count

Authors	Record count
Marr, B.	6
Green, A.	4
Cricelli, L.	3
Grimaldi, M.	3
Kijek, T.	3
Zakrzewska, A.	3
Battagello, F.	2
Derun, I.	2
Hübscher, M.C.	2
Lopes, I.T.	2
Louisot, J.-P.	2
Low, J.	2
Mysaka, H.	2
Roos, G.	2
Timmer, M.P.	2
Užík, M.	2

The resulting author analysis indicates that Marr, B. is the most prolific contributor, with a total of six publications. Marr, B. is an academic affiliated with Columbia University in New York, a finding that aligns with our previous results indicating that the highest publication output on this topic originates from the United States. Although this number may not be considered high in general bibliometric terms, it represents a substantial output within this specific research domain, particularly given that the second-ranked authors—Green, A. has only 4 published articles in given domain. Cricelli, L.; Grimaldi, M.; Kijek, T.; and Zarkewska, A.—have published only three articles each. The remaining 10 authors in the sample have

contributed two publications each, further underscoring the relatively concentrated authorship structure in this field.

3.4. Keyword Analysis

Table 2 presents the top 25 keywords ranked by the frequency of their occurrence, enabling the identification of key trends (or their lack) and dominant areas of focus.

Table 2. Top 25 keywords by the frequency of their occurrence

Keyword	Occurrences
intangible assets	59
intellectual capital	31
knowledge management	9
value drivers	7
performance	6
financial performance	6
human capital	6
competition	5
competitive advantage	5
balanced scorecard	4
corporate reputation	4
disclosure	4
goodwill	4
industry	4
innovation	4
management	4
value creation	4
brand equity	4
business valuation	4
intangibles	4
patents	4
analytic network process	3
global value chains	3
human resource management	3
industrial economics	3

It is somewhat surprising that intangible assets have not attracted greater scholarly attention, given their critical role in building knowledge-based economies—an agenda that, at least rhetorically, is promoted as a strategic priority by modern nation-states. Based on keyword frequency, only the top five terms within the Top 25 list can be considered individually noteworthy; however, their full interpretive value emerges only when examined alongside the remaining 20 keywords, which provide essential contextual framing. The results further suggest that intangible asset research is predominantly conceptualized within corporate environments, a pattern that is logically consistent, as firms operate under strong decision-making pressures that require managers to access accurate information rapidly in order to support high-quality and timely strategic judgments.

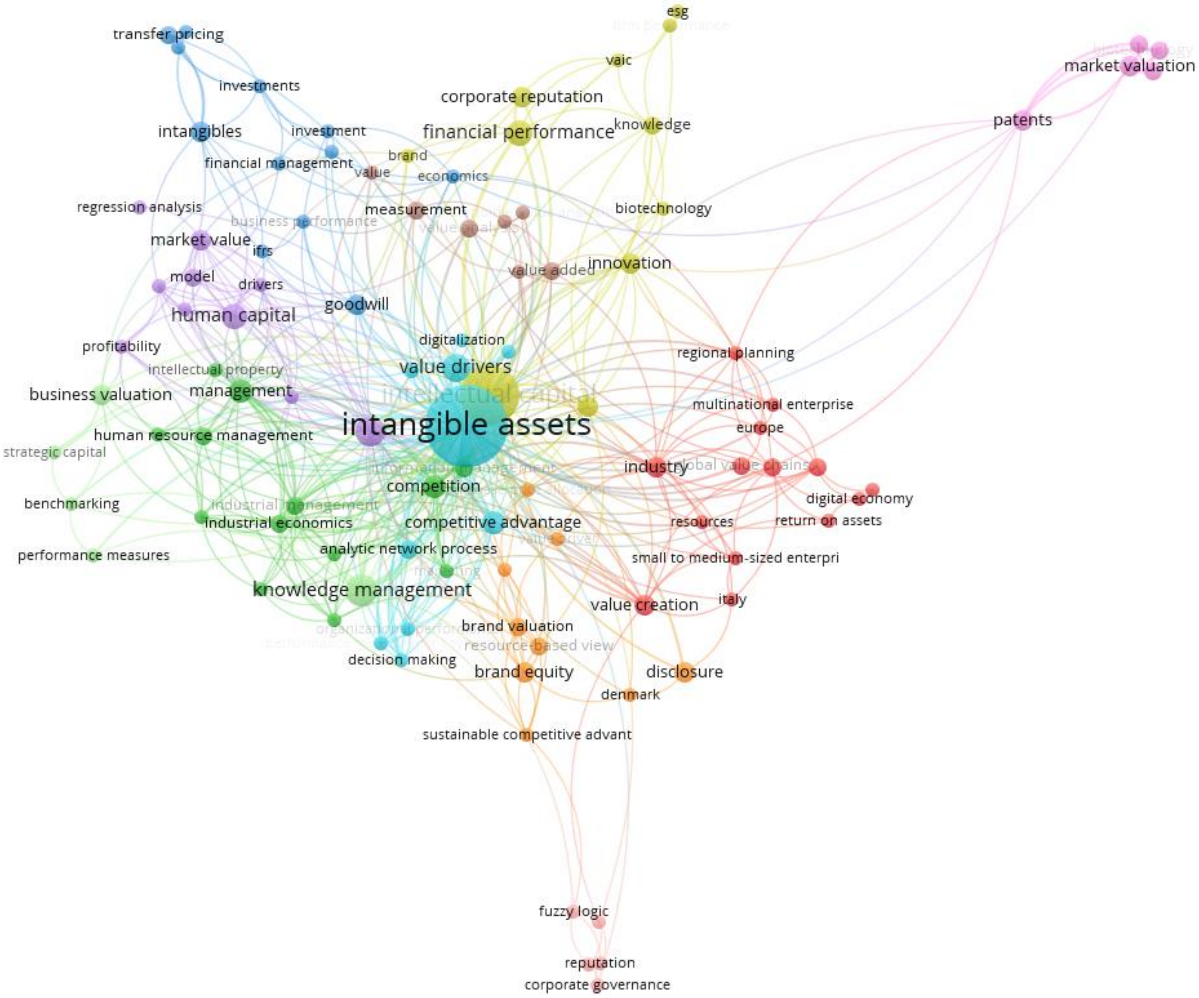

Figure 3. Cluster analysis of keywords

VOSviewer categorized the keyword network into eleven distinct clusters. The first cluster, comprising 14 items (red), reflects Multinational Enterprises and Value Creation in the Digital Economy. The second cluster, consisting of 13 keywords (green), represents Knowledge-Based Management and Intellectual Capital, emphasizing evidence-based decision-making and organizational learning processes. The third cluster, including 12 keywords (dark blue), captures the domain of business performance a financial management.

Concepts such as *intangible assets*, *intellectual capital*, *informational management, performance, value drivers* and *competition* constitute central nodes that interconnect and bridge the majority of thematic clusters across the keyword network. No other keywords exhibit a comparably dominant or structurally central position within the network.

Two relatively isolated keyword groups can be observed—one located in the upper-right section of the visualization and the other located down are indicating comparatively weaker co-occurrence links. Notably, terms such as *fuzzy logic* and *biotechnology firm* exemplify these low-connectivity clusters, reflecting limited thematic integration within the broader keyword network.

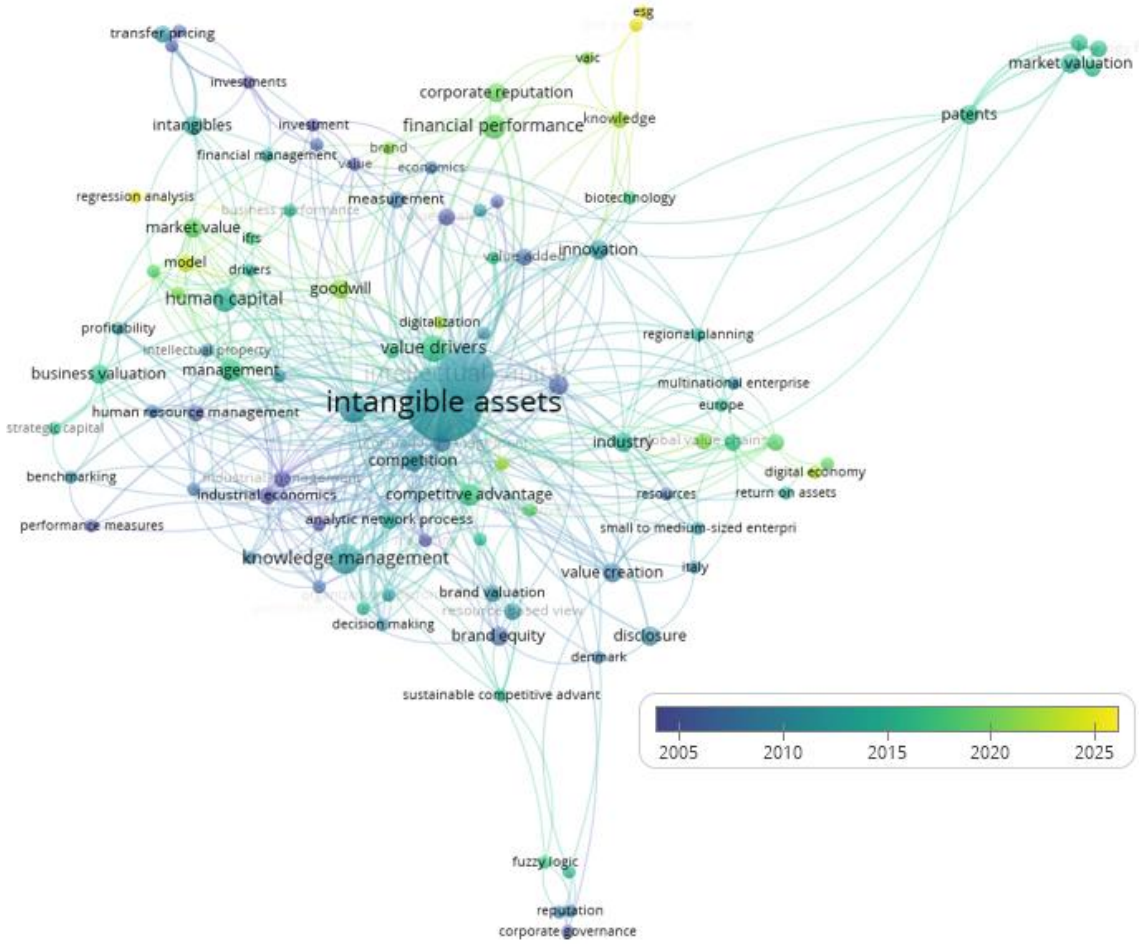

Figure 4. Cluster analysis of keywords by year

VOSviewer filtered the dataset to include publications from 2005 to 2025 and applied a temporal color gradient to the keyword map, where colors correspond to the publication year of the source article in which a given keyword appeared. A preliminary visual inspection suggests that the full temporal spectrum is relatively evenly represented. The strongest and most central nodes are concentrated near the midpoint of the temporal scale, whereas more peripheral and spatially distant keyword clusters tend to align with the more recent end of the gradient, a distribution that is conceptually coherent.

3.5. Publications by Citation Count

Table 3 presents the three most influential articles based on the number of citations.

The most-cited article is also the most recent one, with ESG (Environmental, Social, and Governance) representing its central and thematically defining focus. The high citation rate can therefore be attributed to the substantial rise in ESG-related research and public discourse in recent years, driven by the topic's rapid expansion, strong academic uptake, and polarized perception across both institutional and societal domains. In contrast, the citation impact of the remaining articles can be primarily explained by their earlier publication dates, which provided a longer temporal window for citation accumulation and scholarly diffusion within the field.

Table 3. Top 5 articles by the number of citations

Publication	Year	Authors	Citations	
			Average per year	Total
The end of ESG	2023	Edmans, A.	141,50	283
Drivers of corporate voluntary disclosure: A framework and empirical evidence from Italy and the United States	2007	Boesso, G. Kumar, K.	15,44	278
The dynaics of value creation: Mapping your intellectual performance drivers	2004	Marr, B. Neely, A. Schiuma, G.	11,90	250

Finally, it should be noted that although the article by Edmans, A. is the most highly cited in absolute terms, it cannot be considered an outlier with respect to total citation counts. However, when assessed using average annual citations, the study clearly represents an outlier. Importantly, this did not distort or materially affect the results of the bibliometric analysis.

4. Discussion

The findings derived from the bibliometric analysis are consistent with the trends outlined in the introductory section. Intangible assets remain inherently abstract and difficult to quantify—particularly when non-financial determinants are considered, which likely contributes to the relatively limited volume of scholarly output in this research domain.

Nevertheless – a study conceptually comparable to the present research was identified. Previous bibliometric study of value drivers literature (e.g., Figari, 2022) typically map broad determinants of firm value across multiple domains, including governance, disclosure, and sustainability-related factors. In contrast, the present study narrows this perspective by focusing specifically on intangible assets and their valuation-relevant non-financial drivers. By isolating the intangible-asset dimension and examining its thematic structure and publication dynamics, this paper provides a more targeted view of how value-driver research is organized within this specific domain, allowing the identification of fragmentation and research gaps that broader value-driver mappings may not fully capture (Figari, 2022).

5. Conclusions

The annual publication counts revealed only a modest upward trend, indicating slow growth in research activity. The most active publishing countries were the United States (21), Italy (17), and the United Kingdom (13). At the author level, Marr, B. (United States) was identified as the most prolific contributor, with a total of six publications, which remains a comparatively low output in broader bibliometric terms.

The keyword analysis demonstrated that concepts such as informational management, intellectual capital, and value drivers are recurrently associated with intangible asset research, reflecting the dominant conceptual lenses applied in the field. The cluster analysis further showed that keyword occurrences are temporally balanced across the 2005–2020 period, with no single time-specific thematic surge observed. Intangible assets form cross-

cluster linkages, most prominently with thematic groupings representing corporate behavior and firm performance, and knowledge- and data-driven management, both emphasizing evidence-based decision-making and organizational learning.

Finally, the most highly cited articles were either published in earlier years or address widely adopted research agendas—such as ESG, which naturally attract higher citation traction due to their broader disciplinary and societal relevance, rather than due to a concentrated research interest in intangible assets themselves.

In relation to the secondary objective of this analysis, it should be noted that the examined research domain exhibits signs of fragmentation and systematic omission, likely attributable to the inherent challenges associated with its quantification and conceptualization, thereby giving rise to numerous research gaps.

Conflict of interest: none

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