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# Bibliometric analysis into a decade of academic research on innovation, value creation, and sustainability (2013-2023)

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## Authors' Notes

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## Abstract

**Objective of the Study**: The aim of this study is to conduct a bibliometric analysis of academic publications to evaluate the growth, impact, and trends in research related to innovation, value, and sustainability between 2013 and 2023.

**Methodology/Approach**: The study utilizes a bibliometric approach, analysing data from SCOPUS and Web of Science databases to track scientific output, citation trends, authorship patterns, institutional affiliations, and country contributions within the specified research domain and time frame.

**Originality/Relevance**: This study provides an analysis of the interconnected themes of innovation, value creation, and sustainability within academic literature. The relevance of this research lies in understanding the evolving scholarly landscape and identifying key contributors and trends in these critical areas.

**Main Results**: The analysis reveals a consistent growth in scientific output, with an increase in publications in 2022 and a peak in 2023, indicating a burgeoning research interest. Citation trends demonstrate variations, highlighting the dynamic nature of research and increasing scholarly engagement in these themes over time.

**Theoretical/Methodological Contributions**: The findings contribute to the theoretical understanding of innovation, value creation, and sustainability by mapping out key themes, trends, and research dynamics. The study also showcases the interdisciplinary nature of these fields and the collaborative efforts shaping academic discourse.

**Social/Management Contributions**: The study's insights have managerial implications, emphasizing the importance of interdisciplinary collaboration and highlighting influential institutions and countries in advancing research agendas. Understanding citation patterns and

thematic evolution can inform strategic decision-making and foster meaningful contributions to societal and environmental challenges.

*Keywords:* bibliometric analysis, innovation, value creation, sustainability

## Análise bibliométrica de uma década de pesquisa acadêmica sobre inovação, criação de valor e sustentabilidade (2013-2023)

**Resumo**

**Objetivo do Estudo**: O objetivo é realizar uma análise bibliométrica das publicações acadêmicas para avaliar o crescimento, impacto e tendências em pesquisa relacionadas à inovação, valor e sustentabilidade entre 2013 e 2023.

**Metodologia/Abordagem**: Foi adotada uma abordagem bibliométrica, analisando dados das bases SCOPUS e Web of Science para rastrear produção científica, tendências de citação, padrões de autoria, afiliações institucionais e contribuições de países no domínio de pesquisa e período especificados.

**Originalidade/Relevância**: A análise dos temas interconectados de inovação, criação de valor e sustentabilidade dentro da literatura acadêmica. A relevância está em compreender o cenário acadêmico em evolução e identificar os principais contribuintes e tendências na área.

**Principais Resultados**: O crescimento consistente na produção científica, com um aumento nas publicações em 2022 e um pico em 2023, indicando um interesse crescente na pesquisa. As tendências de citação demonstram variações, destacando a natureza dinâmica da pesquisa e o aumento do engajamento acadêmico nessas temáticas ao longo do tempo.

**Contribuições Teóricas/Metodológicas**: Os resultados contribuem para o entendimento teórico da inovação, criação de valor e sustentabilidade ao mapear temas-chave, tendências e dinâmicas

de pesquisa. Mostra também a natureza interdisciplinar desses campos e os esforços colaborativos que moldam o discurso acadêmico.

**Contribuições Sociais/Gerenciais**: As percepções do estudo têm implicações gerenciais, enfatizando a importância da colaboração interdisciplinar e destacando instituições e países influentes no avanço das agendas de pesquisa. Compreender padrões de citação e evolução temática pode informar a tomada de decisões estratégicas e promover contribuições significativas para desafios sociais e ambientais.

*Palavras-chave:* análise bibliométrica, inovação, criação de valor, sustentabilidade

## Análisis bibliométrico de una década de investigación académica sobre innovación, creación de valor y sostenibilidad (2013-2023)

**Resumen**

**Objetivo del Estudio**: Realizar un análisis bibliométrico de las publicaciones académicas para evaluar el crecimiento, impacto y tendencias en la investigación relacionada con la innovación, el valor y la sostenibilidad entre 2013 y 2023.

**Metodología/Aproximación**: Utiliza un enfoque bibliométrico, analizando datos de las bases SCOPUS y WOS para rastrear la producción científica, tendencias de citas, patrones de autoría, afiliaciones institucionales y contribuciones de países nel dominio de investigación especificado y el marco temporal.

**Originalidad/Relevancia**: Análisis de los temas interconectados de innovación, creación de valor y sostenibilidad en la literatura académica. La relevancia es comprender el panorama académico en evolución e identificar los principales contribuyentes y tendencias en estas áreas.

**Principales Resultados**: Crecimiento constante en la producción científica, con aumento en las publicaciones en 2022 y un pico en 2023, lo que indica un creciente interés en la investigación.

Tendencias de citas muestran variaciones, destacando la naturaleza dinámica de la investigación y el aumento del compromiso académico en estos temas con el tiempo.

**Contribuciones Teóricas/Metodológicas**: Los hallazgos contribuyen al entendimiento teórico de la innovación, la creación de valor y la sostenibilidad al mapear temas clave, tendencias y dinámicas de investigación. También muestra la naturaleza interdisciplinaria de estos campos y los esfuerzos colaborativos que dan forma al discurso académico.

**Contribuciones Sociales/Gerenciales**: Importancia de la colaboración interdisciplinaria y instituciones y países influyentes en el avance de las agendas de investigación. Comprender los patrones de citas y la evolución temática puede informar la toma de decisiones estratégicas y fomentar contribuciones significativas a los desafíos sociales y ambientales.

*Palabras clave:* análisis bibliométrico, innovación, creación de valor, sostenibilidad

## Introduction

Sustainability, value creation, and innovation are key factors in society, contributing to economic transformation, firm value enhancement, and responsible business practices. The integration of green innovation and social responsibility not only positively impacts firm value but also contributes to sustainable development and environmental outcomes (Chouaibi & Chouaibi, 2021; Moreno-Monsalve et al., 2022; Zhang et al., 2020). Technological progress, particularly in green innovation, is essential for promoting sustainable economic development and enhancing firm value (Chong & Loh, 2023).

Additionally, the interaction between ESG performance, technological innovation, and firm value is vital for securing corporate sustainability and promoting responsible investments in developing countries (M. Jung & Kim, 2022). These themes are interconnected and essential for

nurturing a sustainable and prosperous society. Sustainability is essential for addressing environmental and social concerns (Kuzma et al., 2020; Maier et al., 2020), while innovation drives growth and industrial progress (Bernal-Torres et al., 2023; Le Bas, 2017). Value creation, especially sustainable value, aligns shareholder wealth with sustainable practices, offering immense market opportunities (Hart & Milstein, 2003).

Companies create sustainable value through different methods, which can be influenced by the company's location and size. Dominant patterns of integrating sustainable value include establishing a sustainable supply chain, implementing innovations, fostering relationships with stakeholders and consumers, and participating in the sharing economy (Zioło et al., 2023). Research indicates that ESG initiatives significantly impact firm innovation, sustainability performance, and corporate value (Jin & Lei, 2023; Y. L. Jung & Yoo, 2023) confirming that prioritizing sustainability can lead to innovative practices that enhance a firm's overall value and financial performance. ESG activities specifically impact market-based firm performance, profit margin, and return on assets positively, with innovation acting as a mediator between ESG performance and sustainability outcomes (Majid et al., 2023; Zhou et al., 2023).

The adoption of resource efficiency measures, promoting environmental responsibility, and offering green products, can affect positively the performance enterprises, emphasizing the connection between eco-efficiency practices, firm performance, and sustainable innovation (Espinosa-Méndez et al., 2023). As a core tenet, sustainability seeks equilibrium across ecological, social, and economic fields, striving for responsible practices that mitigate environmental impacts and uphold societal well-being (Kuzma et al., 2020). The pursuit of sustainability is closely linked with value creation, as innovative efforts guided by sustainability principles can improve a firm's competitive advantage and market positioning (Bernal-Torres et

al., 2023). By addressing societal needs and fostering eco-conscious solutions, innovation generates value while simultaneously advancing sustainability objectives (Le Bas, 2017; Maier et al., 2020).

Bibliometric analysis holds importance in academia due to the overwhelming volume of publications and the need to synthesize past research effectively (Hood & Wilson, 2001). It provides a systematic, transparent, and reproducible review process based on statistical measurements, offering objective and reliable analyses (Aria & Cuccurullo, 2017). By structuring the analysis of a large body of information, bibliometrics allows for trend inference over time, identification of research themes, detection of prolific scholars and institutions, and a detailed overview of existing research. A bibliometric analysis of academic research on innovation, value creation, and sustainability is justified due to the increasing importance of these interconnected concepts in driving organizational success and addressing global challenges.

The analysis can provide insights into the evolution of research trends, influential authors, and key journals in this interdisciplinary field (Kuzma et al., 2020). It can also help identify common points and future research directions between innovation and sustainability, highlighting the intellectual structure and most addressed topics in the domain (Maier et al., 2020). Furthermore, understanding the relationship between innovation, sustainability, and organizational performance is important for companies aiming to enhance their competitiveness and long-term viability (Hart & Milstein, 2003). In the evolving scientific landscape, bibliometric analysis is important for comprehending discipline dynamics and making informed decisions in research and policymaking. It helps navigate the complexities of accumulating knowledge in a dynamic scientific environment.

Considering these insights, this study seeks to address the following problem question: "What are the key trends and patterns within the academic studies on innovation, value, and sustainability over the past decade (2013-2023)?". The aim of this study is to conduct a bibliometric analysis of academic publications to evaluate the growth, impact, and trends in research related to innovation, value, and sustainability between 2013 and 2023.

Specifically, we aim to identify influential publications, authors, and research trends, ultimately contributing to a holistic understanding of the evolving scholarly landscape in these domains. In pursuit of our research aim, we have established several objectives. Firstly, we aim to evaluate the annual growth rate of publications encompassing innovation, value, and sustainability for the period spanning from 2013 to 2023. Secondly, we seek to ascertain the average age of the documents contained within our dataset, alongside their average citation count, providing insights into their temporal relevance and academic impact. Thirdly, our objective is to identify the most frequently cited external sources that are referenced within these documents, shedding light on the works shaping scholarly discourse in these domains. Additionally, we endeavour to conduct an in-depth analysis of authorship patterns, including considerations such as the number of authors per document, instances of international collaboration, and prolific authors who have made contributions to the field. Furthermore, our objectives encompass the categorization of document types present in the dataset, allowing us to discern the prevalence of various forms of scholarly contributions. Lastly, we aim to scrutinize the distribution of keywords associated with the documents, providing insights into the prevailing themes and evolving research trends within the domains of innovation, value, and sustainability.

To achieve these aims and its objectives, we employ a research methodology that involves the collection and analysis of bibliographic data from two databases, Scopus, and Web of Science. These databases were selected for their extensive coverage of scholarly literature, ensuring the inclusion of high-quality and impactful publications in our dataset (Donthu et al., 2021; Hood & Wilson, 2001; Öztürk et al., 2024).

In subsequent sections, a review of the literature pertaining to the study topic will be undertaken. The methodological procedures for delineating the sample and attaining the proposed aims and its objectives will be explicitly outlined. Following this, the findings resulting from data analysis will be scrutinized. Lastly, in the conclusion, ultimate remarks will be offered, addressing the study's limitations, and providing recommendations for future research.

## Theoretical reference framework

The establishment of sustainable value through the process of value creation aims to align shareholder wealth with sustainable practices (Hart & Milstein, 2003) which means that sustainable value creation is the process through which companies generate value not only for shareholders but also for various stakeholders and the environment, focusing on long-term sustainability (Manninen et al., 2024; Norris, 2023; Zioło et al., 2023). This concept involves incorporating sustainability into business models, building relationships with stakeholders, creating a sustainable supply chain, promoting innovations, and emphasizing emotional and social value alongside economic aspects (Cardoni et al., 2020; Hara et al., 2022). Enterprises must adapt their strategies for value creation and expansion to thrive among the uncertain and demanding landscape of the future business environment, a challenge impacting nearly every sector. This transformation is motivated by the turbulence and ambiguity characterizing contemporary business operations, necessitating innovative methodologies for both value creation and organizational development (Kurznack et al., 2021).

Enterprises could create several forms of value, like economic, social, and environmental, adopting sustainable business models and practices, which focus on generating economic value while maintaining or regenerating natural, social, and economic capital beyond organizational boundaries (Manninen et al., 2024; Norris, 2023). Collaborative Sustainable Business Models emphasize creating multiple values, such as social and environmental, by involving relevant actors to strengthen the entire value network (Derks et al., 2022). Sustainable value creation highlights the producing social, environmental, and economic value to promote sustainable development and attend to the interests of stakeholders (Hart & Milstein, 2003; Zioło et al., 2023). An integration of these different forms of value creation, businesses can align their operations with sustainability goals, and contribute positively the environment and to society.

In adopting and implementing sustainable value creation practices, companies face several barriers and challenges. One major challenge is the perception of sustainability as a one-dimensional nuisance rather than a multidimensional opportunity, hindering strategic planning (Hart & Milstein, 2003). Additionally, the conflicting interests of multiple stakeholders, potential value trade-offs, and the temporal and spatial complexities of value creation pose significant barriers (Manninen et al., 2024). The necessary balance between short-term financial results and long-term sustainability goals, leading to difficulties in integrating sustainable practices into business models (Treptow et al., 2022). Moreover, the pressure for short-term investments in green technologies further with the lack of quantifiable metrics to measure the benefits of environmental innovation can create difficulties to the successful adoption of sustainable practices (Khalil et al., 2022).

Sustainability practices can indeed lead to increased costs for businesses, potentially impacting competitiveness (Bernal-Torres et al., 2023). While investing in resource efficiency

actions is essential for Small and Medium-sized Enterprises (SME) performance, it may not relate to increased turnover, as many SMEs allocate only a small portion of their revenue to such actions (Bernal-Torres et al., 2023). Additionally, the high cost of environmental actions can negatively affect turnover, indicating a potential financial burden (Majid et al., 2023). However, despite potential cost implications, sustainability practices like innovation have been shown to positively impact firm performance and competitiveness (Aksoy et al., 2022a; Hara et al., 2022). Companies should consider that, while there are initial cost increases associated with sustainability practices, the long-term benefits in terms of improved performance and competitiveness can overbalance these challenges.

The connection between sustainable and innovation is important to environmental, economic, and social development matters (Zhang et al., 2020). The process entails the creation of novel concepts, goods, services, procedures, or managerial frameworks aimed at tackling environmental issues (Chouaibi & Chouaibi, 2021). By integrating green innovation with social responsibility, firms can positively impact financial, social, and environmental outcomes, contributing to sustainable business development (Le Bas, 2017). Sustainable innovation is essential for achieving sustainable competitive advantage, enhancing firm value, and promoting long-term economic growth (Le Bas, 2017). It stands as a component in fostering more logical consumption behaviours, lessening environmental footprints, and progressing towards sustainable development objectives (Kuzma et al., 2020). In general, sustainable innovation serves as an important instrument for enterprises to harmonize their strategies with sustainability principles, leading to favourable economic, social, and environmental consequences.

Environmental, social and governance (ESG) practices play a fundamental part in the interface between innovation, value creation, and sustainability. The adoption of ESG criteria

positively influences firms' innovation capacity, enhancing their ability to innovate (Broadstock et al., 2020). Green innovation, combined with social responsibility, can impact firm value, with a potential complementary or substitutive effect (Chouaibi & Chouaibi, 2021; Zhang et al., 2020). Sustainable value creation encompasses economic, social, and ecological aspects, emphasizing positive business results and stakeholder benefits (Zioło et al., 2023). Firms' ESG-oriented investments in innovation further contribute to value creation, as evidenced in Asian economies (Khalil et al., 2022). Overall, the integration of ESG practices into business models not only fosters innovation but also drives sustainable value creation, aligning with societal expectations and environmental integrity.

Although there may be criticisms in this regard, the focus on ESG practices and sustainability may not necessarily divert attention and resources away from other important business priorities, potentially limiting overall growth and profitability. ESG practices can enhance a company's competitive advantage, attract investors, and improve innovation capacity (Chouaibi & Chouaibi, 2021; E-Vahdati & Binesh, 2022). Companies integrating ESG factors into their business models can create sustainable value and transform towards sustainable business models without compromising growth and profitability (Zhou et al., 2023). Moreover, sustainable practices can lead to improved financial returns, stakeholder trust, and less criticism, ultimately benefiting the company's bottom line (Chong & Loh, 2023).

The adoption of ESG practices, that has effect on higher share prices, firm value, and profitability, is associated with better financial performance (Bhattacharya & Bhattacharya, 2023). In this context, ESG initiatives have been associated to competitive advantage, attractiveness to investors, and improved innovation capacity, ultimately leading to increased firm value (Sandberg et al., 2023). Furthermore, the integration of ESG pillars into business

models, particularly in sectors like Biopharma, has been found to positively impact marketing performance and overall business sustainability (E-Vahdati & Binesh, 2022). In summary, the embracing ESG practices could contribute to improved financial performance and long-term value creation for firms.

## Method

A bibliometric analysis has been carried out on a decade-long span of academic research centred on innovation, value creation, and sustainability from 2013 to 2023. The application of bibliometric analysis holds impact within academic contexts concerning innovation, value, and sustainability due to multiple reasons (Hood & Wilson, 2001). Initially, it offers a systematic and quantitative method to evaluate the progression and influence of research in these essential domains. Through the identification of impactful publications, authors, and patterns, scholars can gain a deeper comprehension of the development of innovation, value creation, and sustainability within academic discussions (Öztürk et al., 2024).

Moreover, bibliometric analyses offer information to policymakers, organizations, and funding agencies about the most impactful research in various disciplines, what support the process of making well-informed decisions regarding the allocation of resources and determining the prioritization of research areas (Hood & Wilson, 2001; Öztürk et al., 2024). Lastly, given that innovation, value, and sustainability are multidisciplinary subjects, bibliometrics assist researchers in recognizing interdisciplinary partnerships and patterns, thereby facilitating the exchange of knowledge, and promoting comprehensive strategies for tackling intricate challenges in these areas.

Methodological approach

The process of choosing articles in Elsevier's Scopus and Clarivate's Web of Science databases is recommended for bibliometric studies due for its thorough and extensive nature

(Aria & Cuccurullo, 2017). These databases offer extensive datasets that can be easily exported and analysed using various bibliometric software tools, allowing for in-depth research analysis and visualization (Öztürk et al., 2024). Additionally, Scopus and Web of Science are known for their extensive coverage of academic literature across various disciplines and research domains, reducing the risk of overlapping publications and ensuring a more focused dataset (Hood & Wilson, 2001). These databases provide extensive citation data, allowing scholars to track the long-term effects and importance of publications.

Scholars frequently prefer these databases due to their dependability and thorough scope, positioning them as optimal options for choosing publications for analysis and evaluating the impact where researchers can effectively identify relevant literature, understand field structures, track emerging trends, and establish relationships between authors, papers, and concepts in a field from a broader perspective (Hood & Wilson, 2001; Öztürk et al., 2024). These databases utilize indexing and abstracting services to identify and incorporate scholarly articles from a diverse array of academic journals, conference proceedings, and reputable sources. Inclusion criteria typically encompass factors such as peer-reviewed status, academic relevance, and adherence to quality control measures (Hood & Wilson, 2001).

**Table 1**

*Inclusion or exclusion criteria applied in bibliometric research.*

| *Criteria* | *Description* | *Articles in the Sample* |
|---|---|---|
| Initial search. | Researching the various variations of keywords in titles, abstracts, and keywords in databases. | Scopus: 147<br>Web of Science: 150. |
| *Applied filters*. | Period of the search: 2013 to 2023<br>Document Type: Article<br>Font of the search: Journal | Scopus: 123.<br>Web of Science: 139. |
| *Merging samples and removing duplicates* | A script in "R" was used to consolidate data by removing duplicate articles from two databases. | Final Sample: 174. |
| *Search Algorithm in the source databases* | For Scopus:<br>Query: (TITLE-ABS-KEY("valu*" "esg" "innovat*") OR TITLE-ABS-KEY("sutainab*" "valu*" "innovat*") OR TITLE-ABS-KEY("valu *" "Environment*, Social* and Governanc*" "innovat*")) AND PUBYEAR > 2012 AND PUBYEAR < 2024 AND (LIMIT-TO(DOCTYPE, "ar")) AND (LIMIT-TO(SRCTYPE, "j")).<br><br>For Web of Science:<br>Query: Results for "valu*" "esg" "innovat*" (Topic) OR "sutainab*" "valu*" "innovat*" (Topic) AND "valu*" "Environment*, Social* and Governanc* " "innovat*" (Topic) and 2023 or 2022 or 2021 or 2020 or 2019 or 2017 or 2016 or 2015 or 2014 or 2013 or 2023 or 2022 or 2021 or 2020 or 2019 or 2017 or 2016 or 2015 or 2014 or 2013 (Years publication) and Article (Document types). | |

*Source:* Data select from Scopus and Web of Science and processed by R

In terms of the search algorithms utilized in the Scopus and Web of Science databases, a pair of queries were executed to extract pertinent articles pertaining to the themes of value, innovation, and sustainability (or ESG) from the designated period and document categories found within the individual databases. Following the selection of sample articles, files were created adhering to the Bibtex standard on both research platforms. Subsequently, a script was employed, leveraging the functionalities of the R software, to consolidate both sets of files. This consolidation process involved the elimination of duplicate articles that appeared in both databases, as presented in

**Table *1***. Consequently, a structured spreadsheet containing the sample data was generated, serving as the foundation for information processing and subsequent analysis facilitated by the Biblioshiny application (Aria & Cuccurullo, 2017).

This methodological strategy ensured the reliability and trustworthiness of the information collected, while also enhancing the efficiency and effectiveness of the data analysis procedure employed in the investigation.

*a) Data description*

The dataset, plotted in

Figure ***1***, encompasses a ten-year timespan from 2013 to 2023, comprising data from 113 distinct sources, including journals and books, resulting in a total of 174 documents. Over this period, there has been an annual growth rate of 44.97%. On average, the documents in this dataset are relatively recent, with an average age of 1.18 years. They have garnered an average of 10.61 citations per document, highlighting their academic importance. Moreover, these documents collectively reference a total of 3,628 external sources. Regarding document contents, there are 526 entries in the "Keywords Plus (ID)" category and 658 in "Author's Keywords (DE)," indicating a rich and varied set of keywords associated with the documents.

**Figure 1**

*Main information about the sample*


*Source: Data select from Scopus and Web of Science and processed by Biblioshiny.*

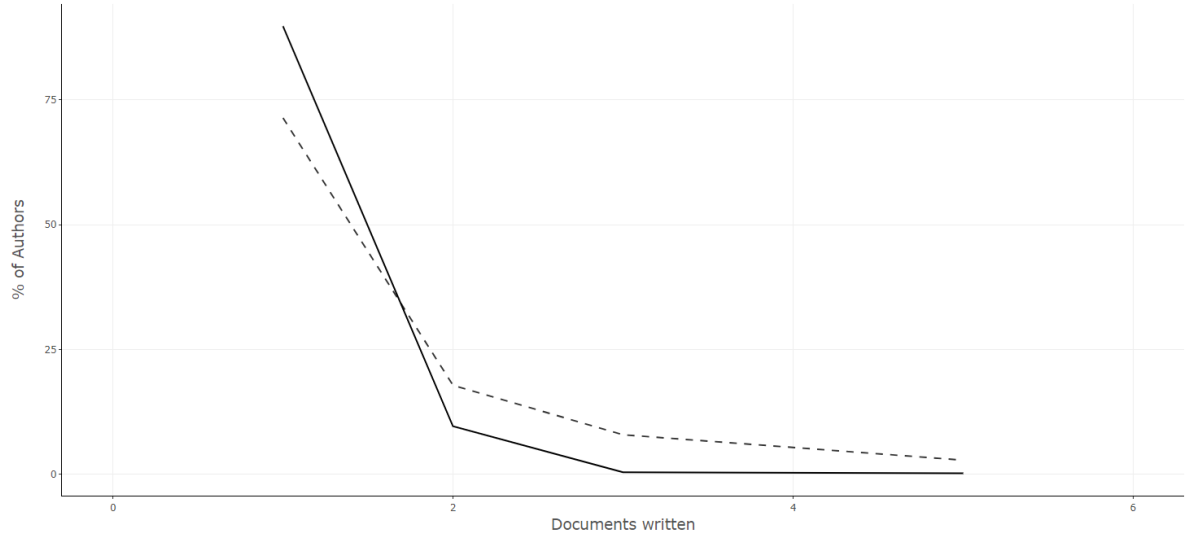
In terms of authors, a total of 467 authors contributed to these documents, with 17 authors responsible for single-authored documents. Collaboration among authors is prevalent, with an average of 2.99 co-authors per document. International collaboration accounts for 13.79% of these co-authorships. Regarding document types, the majority (163) fall under the category of "article," with a small number classified as "article; early access" (10) and one as "article article" (1). This dataset provides insights into the scholarly contributions related to the study topic, offering an overview of the research landscape over the specified timeframe.

A bibliometric analysis is a quantitative research method used in the field of bibliometrics to evaluate and measure various aspects of academic literature, typically focusing on publications, citations, and their patterns (Hood & Wilson, 2001). It involves the systematic collection and analysis of bibliographic data to gain insights into the scholarly output and impact of academic research. Some well-known bibliometric laws include Lotka's Law (Lotka, 1926), which describes the distribution of the number of authors per publication; Bradford's Law (Bradford, 1934), which relates to the scattering of journal articles across different journals; Zipf's Law (Zipf, 1949), which describes the distribution of word frequencies in a text; and

Price's Law (Price, 1976) which suggests that a small number of authors or scientists contribute to a portion of the total scientific output within a discipline. These laws help researchers understand and model the patterns and dynamics within academic literature.

**Figure 2**

*Author Productivity through Lotka's Law*




*Source*:Data select from Scopus and Web of Science and processed by Biblioshiny

Regarding to authors analysis, according to Lotka's Law, which describes the distribution of the number of authors per publication (Lotka, 1926), we observe in Figure 2 a typical pattern where a small proportion of authors are highly productive, while most authors have lower productivity. In the dataset presented on Table 2, the first column represents the number of documents written by authors, the second column shows the corresponding number of authors, and the third column indicates the proportion of authors falling into each category of document production.

**Table 2**

*Author Productivity through Lotka's Law*

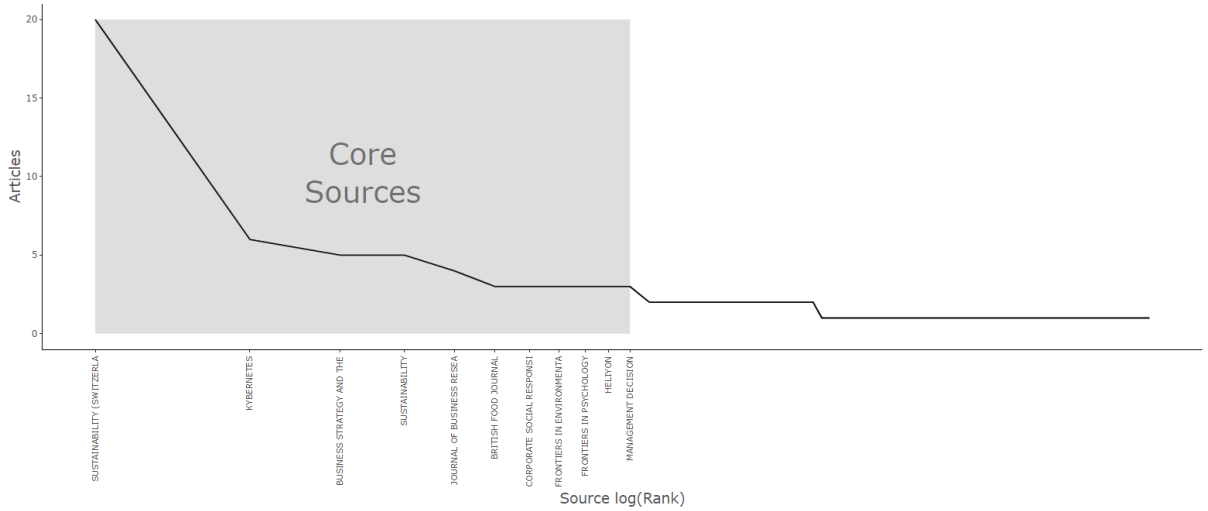
| *Documents written* | *N. of Authors* | *Proportion of Authors* |
|---|---|---|
| *1* | 419 | 0.897 |
| *2* | 45 | 0.096 |
| *3* | 2 | 0.004 |
| *5* | 1 | 0.002 |

*Source: Data select from Scopus and Web of Science and processed by Biblioshiny*

Applying Bradford's Law of Scattering to this sample of 113 academic journals reveals a characteristic distribution pattern, plotted in Figure 3. According to Bradford's Law, a small number of journals are highly productive, followed by a larger group of moderately productive journals, and a larger number of journals with diminishing productivity (Bradford, 1934). In this dataset, the top-performing journals in Zone 1, signifying the most productive, include "Sustainability (Switzerland)," "Kybernetes," "Business Strategy and the Environment," and "Sustainability." These journals exhibit the highest publication frequency and align with Bradford's Law (Bradford, 1934).

**Figure 3**

*Core Sources by Bradford's Law*




*Source:* Data select from Scopus and Web of Science and processed by Biblioshiny

The remaining journals are dispersed across Zones 2 and 3, indicating lower productivity, consistent with Bradford's Law's principle of diminishing returns and scattering. This distribution underscores the importance of highly productive journals in their respective subject areas, while most journals have lower publication frequencies, aligning with Bradford's Law's predictions, signifying their relatively lower impact or productivity in the academic landscape.

In conclusion, the bibliometric analysis conducted using Scopus and Web of Science databases employed rigorous selection criteria and search algorithms to retrieve relevant documents on value, innovation, and sustainability within a specified timeframe. The consolidation of data using Bibtex standard and R software ensured data integrity, resulting in a structured dataset for analysis. The dataset spanned a ten-year period, comprising 174 documents from 113 distinct sources, with an annual growth rate and citation impact. Collaboration among authors was common, highlighting the international nature of research contributions, while the dataset's varied keyword entries provided a view of the research landscape within the study topic.

## Analysis of Results and Discussion

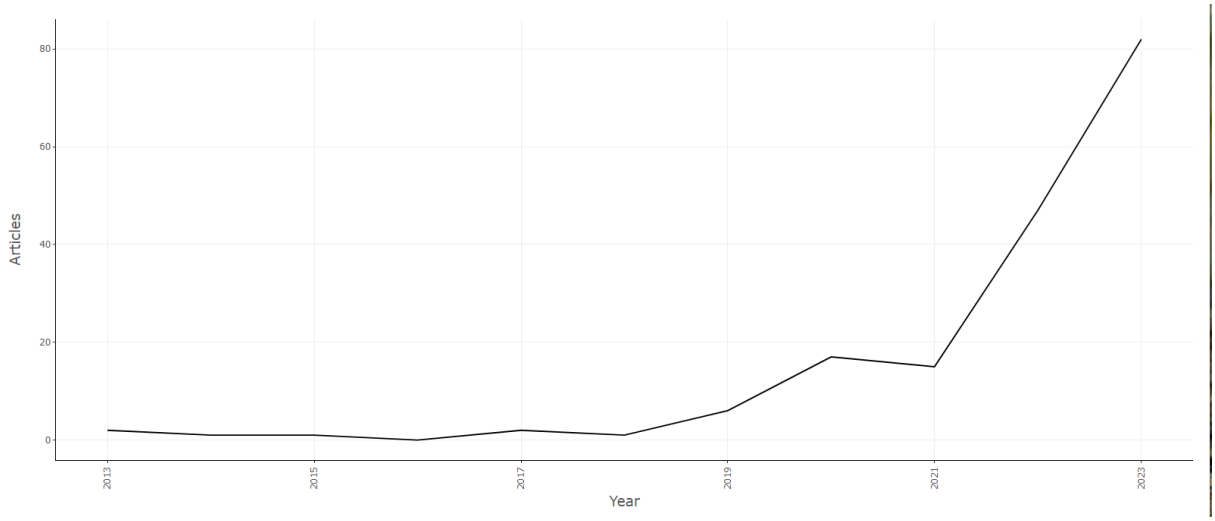
In this section, we present the main results of our analysis. The information gathered from the Scopus and Web of Science databases will be subject to thorough analysis and manipulation, aided using the R software and the Biblioshiny tool. (Aria & Cuccurullo, 2017).

*b) Scientific productions and citations over time*

The data presented in Figure 2 illustrates the annual scientific production over an eleven-year span, from 2013 to 2023. In 2013, the production consisted of 2 articles, followed by 1 article in both 2014 and 2015. There was no recorded scientific production in 2016. The trend shifted in 2017, with 2 articles, and in 2018, one article was produced. However, a change occurred in 2019, marked by a substantial increase to 6 articles. This upward trajectory continued in subsequent years, with 17 articles in 2020 and 15 articles in 2021. The pinnacle was reached in 2022, which witnessed a rise in scientific production, totalling 47 articles. The year 2023 surpassed all previous years with 82 articles, indicating substantial and continuous growth in scientific output during this eleven-year period. Regarding the Average Citations Per Year, we observe some distinct trends over the years. In 2013, there were 2 documents, and on average, they received 83.5 citations per year. When we consider only the citable years of these documents, the average drops to 7.59 citations per year. Moving on to 2014, there was 1 document that received an average of 119 citations per year, and for citable years, this average was 11.90 citations per year. However, in 2015, we see a shift as the average citations per year dropped to 14 for 1 document, and for citable years, it decreased to 1.56. This trend continued in 2017, where 2 documents had an average of 14 citations per year, with an average of 2.00 citations per year for citable years.

**Figure 4**

*Annual Scientific Production*




*Source*: Data select from Scopus and Web of Science and processed by Biblioshiny

In the following years, 2018 and 2019, both with one document each, the average citations per year for citable years increased to 14.00 and 5.40, respectively. The year 2020 marked an increase in both average citations per year and average citations per year for citable years, with 17 documents. They received an average of 33.65 citations per year, and for citable years, this average was 8.41 citations per year. However, in 2021, there was a noticeable decline, with an average of 11.8 citations per year for 15 documents, and for citable years, this average was 3.93 citations per year. This downward trend continued in 2022, with an average of 6.66 citations per year for 47 documents, and for citable years, it was 3.33 citations per year. In the most recent year, 2023, with 82 documents, the average citations per year decreased to 2.57, and the average citations per year for citable years was also 2.57. In summary, there is a discernible pattern of variations in Mean Citations Per Year and Mean Citations Per Year for Citable Years over the years, indicating fluctuations in citation rates and research impact during this eleven-year period.

In conclusion, the examination of yearly scientific output spanning from 2013 to 2023 demonstrates an increase in scientific productivity, marked by a rise in 2022 and reaching its highest point in 2023., where 82 articles were produced, indicating a vibrant and expanding research landscape in the fields of innovation, value, and sustainability. Moreover, when examining the trends in Mean Citations Per Year and Mean Citations Per Year for Citable Years over the same period, we find variations, reflecting fluctuations in citation rates and research impact. These variations highlight the dynamic nature of research in these areas, with some years witnessing higher citation rates than others. Overall, the data underscores the increasing scholarly interest and engagement in topics related to innovation, value, and sustainability over the years. Researchers and policymakers alike should consider these trends as they navigate the evolving landscape of scientific contributions in these critical domains.

c) *Sources, authors, affiliations, and countries*

The dataset provides information on the primary sources within a selection of 113 academic journals chosen for their emphasis on innovation, value, and sustainability (ESG) concepts. It offers insight into the distribution of research within this field. Especially, "Sustainability (Switzerland)" leads with 20 articles, followed by "Kybernetes" with six. Several sources, including "Business Strategy and The Environment," "Sustainability," "Journal of Business Research," "British Food Journal," "Corporate Social Responsibility and Environmental Management," "Frontiers in Environmental Science," "Frontiers in Psychology," "Heliyon," and "Management Decision," each contribute three articles.

The data reveals the diversity of subject areas these sources cover concerning innovation, value, and sustainability (ESG) concepts. This diversity underscores the interdisciplinary nature of these themes, indicating collaborative and cross-disciplinary efforts to address the complex

challenges associated with sustainable development and responsible innovation. These sources primarily explore the intersection of innovation, value, and sustainability concepts, likely focusing on sustainable business practices, environmental conservation, social responsibility, and innovation across sectors. The substantial number of articles from these sources highlights their importance in contemporary academic discourse and research in sustainability and business studies.

While "Sustainability (Switzerland)" primarily focuses on sustainability-related research, other sources like "Kybernetes," "Business Strategy And The Environment," "Journal Of Business Research," "British Food Journal," "Corporate Social Responsibility And Environmental Management," "Frontiers In Environmental Science," "Frontiers In Psychology," "Heliyon," and "Management Decision" cover a broader spectrum of subjects, contributing to a multidisciplinary approach in exploring aspects of innovation, value, and sustainability across various academic disciplines and fields.

Applying Lotka's Law, we can identify that a substantial proportion of authors (0.897) have authored only one document, indicating a high degree of single-document authors. As we move to authors who have written two documents, the proportion decreases significantly to 0.096. For authors with three documents, the proportion is even smaller (0.004), and there is one author with five documents (proportion 0.002). These findings adhere to the Lotka's Law principle, highlighting a concentration of authors with lower productivity and a smaller number of authors with higher productivity. Turning our attention to the Authors' Local Impact, we can apply metrics such as h-index, g-index, and m-index for various authors. Among the authors, KHALIL M (Khalil et al., 2022; Khalil & Nimmanunta, 2021) stands out with an h-index and an g-index of 5, and an m-index of 2.500, indicating a substantial local impact based on their

publications. Other authors, such as AKSOY L (Aksoy et al., 2022), BINESH F (E-Vahdati & Binesh, 2022a; Ozdemir et al., 2022), and BUOYE A (Aksoy et al., 2022), have h-index and an g-index of 2, and an m-index of 1.000. These authors made contributions within their respective spheres of research, aligning with the principle of Lotka's Law that a small number of authors tend to have a higher impact and productivity compared to the majority.

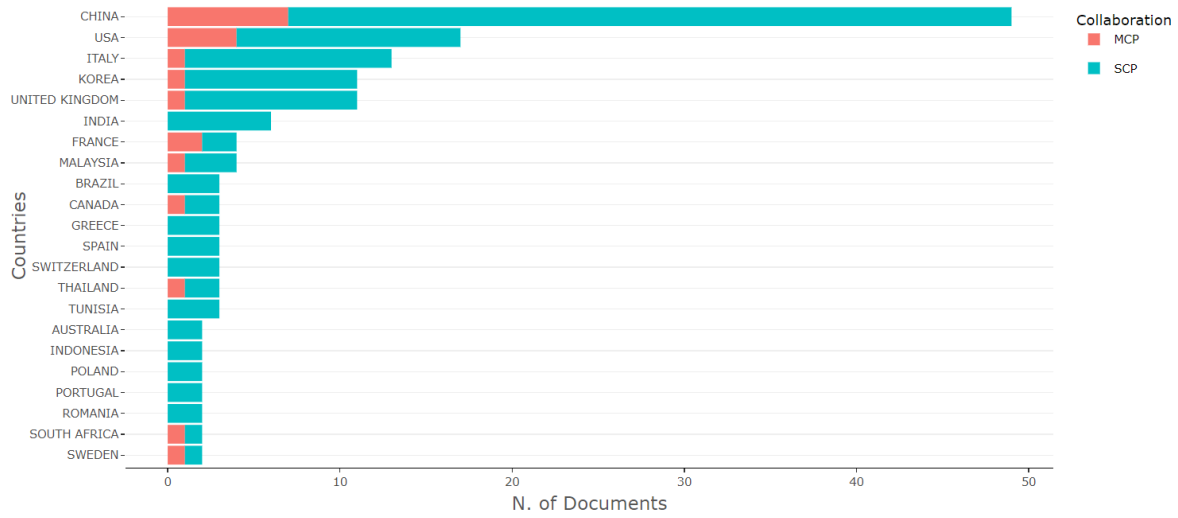
The analysis of affiliations within the sample of 342 institutions highlights several that stand out as the most relevant contributors based on the number of articles published. Topping the list is Nan fang Coll Guangzhou with 6 articles, followed closely by Sapienza Univ Rome and Shandong Univ, both with 5 articles each. Sch Management, Univ Michigan, and Financial University Under the Government of The Russian Federation is also a noteworthy affiliation, with each one contributing 4 articles. Furthermore, Hangzhou City Univ, Johns Hopkins Univ, Kookmin University, Lucian Blaga Univ Sibiu, Nanjing Audit Univ China, Univ Nevada, Univ Witwatersrand, University of Sfax, University of Siena, and Zhejiang Univ all exhibit substantial research activity, each having 3 articles associated with them. These affiliations represent the most prominent contributors to the body of literature on the topics of innovation, value, and sustainability within the sample, reflecting their active engagement and scholarly contributions in these areas.

The data regarding the corresponding author's countries reveals interesting patterns in terms of multiple country publication (MCP) and single country publication (SCP) standards, as illustrated in Figure 5. For many countries, SCP is the dominant publishing approach, signifying that most research articles have corresponding authors from a single country. China, with the highest article count of 49, primarily follows MCP, indicating a higher propensity for international collaboration. This is further emphasized by China's MCP ratio of 0.143, which is

higher than its SCP ratio of 0.282. The United States, with 17 articles, showcases a mixed approach. While 15 articles follow the SCP standard, indicating domestic authorship, four articles adopt MCP, emphasizing international collaboration. Italy, Korea, and the United Kingdom, each with 11 articles, exhibit similar tendencies, with SCP being the predominant standard. In contrast, countries like Greece, Spain, Switzerland, and Tunisia, each with three articles, predominantly follow SCP standards, indicating a preference for domestic authorship in their research endeavours. Interestingly, some countries, such as Albania, Egypt, Germany, and South Africa, display a MCP ratio of 1.000, signifying that all their articles involve international collaboration. These countries may prioritize global engagement and partnership in their research efforts.

**Figure 5**

*Corresponding Author's Countries*




*Source:* Data select from Scopus and Web of Science and processed by Biblioshiny.

In summary, the data highlights the diversity of publishing standards among countries, with some favouring international collaboration (MCP) and others emphasizing domestic authorship (SCP) in their scientific production within the field of innovation, value, and sustainability.

The data on Countries' Scientific Production and Most Cited Countries offers an important view of the scientific development and impact of various nations in the context of innovation, value, and sustainability research. In terms of scientific production, China leads the way with an output of 94 articles, exhibiting its robust commitment to research in these domains. The United States follows with 39 articles, while the United Kingdom and Italy demonstrate strong contributions with 25 and 22 articles, respectively. This data reflects a substantial global interest in the subject matter, with countries like South Korea, France, Canada, Malaysia, Spain, Australia, and India also actively participating in research endeavours, each contributing 7 or more articles.

When shifting the focus to the Most Cited Countries, a slightly different picture emerges. While China maintains its position as the leader in scientific production, it does not dominate the citation metrics to the same extent. The United States, despite having fewer articles, exhibits a significantly higher average article citation rate of 16.80, demonstrating the impact and influence of its research output. The United Kingdom follows closely with an average article citation rate of 22.00, underlining the quality and impact of its contributions. Italy, with 199 citations and an average of 15.30 per article, also demonstrates strong research impact. Interestingly, Greece stands out with an extraordinary average article citation rate of 42.00, albeit with a lower total citation count. Tunisia, France, Switzerland, and Spain also exhibit an average citation rate, suggesting that research from these countries tends to have a substantial impact within the field.

In summary, the data on scientific production and citations underscore the nuanced relationship between academic relevance and impact in the field of innovation, value, and sustainability research. While some countries, such as China, exhibit substantial scientific production, the true impact of research is often reflected in citation metrics. The United States and the United Kingdom, despite producing fewer articles, showcase significantly higher average article citation rates, indicating that their research has a substantial influence and resonance within the academic community. This highlights the importance of both quantity and quality in assessing the academic contribution of nations to the field, where impactful research can transcend sheer volume and leave a lasting imprint on scholarly discourse.

In the data on countries' scientific production and most cited countries, Brazil appears to have a presence in terms of scientific production with four articles. However, when considering citation impact, Brazil's performance is comparatively modest, with an average article citation rate of 4.70. This suggests that while Brazil actively contributes to research in the field of innovation, value, and sustainability, there is potential for further increasing the impact and visibility of its research within the global academic community. It's important for Brazil to continue fostering high-quality research that can garner more citations and recognition on the international stage.

The analysis of sources, authors, affiliations, and countries in the field of innovation, value, and sustainability provides insights into the landscape of academic research in this domain. The dataset reveals a diverse range of sources contributing to this field, reflecting the interdisciplinary nature of the subject matter and the collaborative efforts across various academic disciplines. While some journals primarily focus on sustainability-related research, others cover a broader spectrum of subjects, contributing to a multidisciplinary approach.

Applying Bradford's Law and Lotka's Law to the dataset confirms established patterns in academic publishing, where a small number of highly productive sources and authors coexist with a larger number of moderately productive ones. This distribution underscores the importance of highly productive sources and authors in their respective domains, while acknowledging the role of less prolific ones. The analysis of affiliations highlights several institutions as the most relevant contributors, reflecting their active engagement and scholarly contributions in the fields of innovation, value, and sustainability. These institutions play a central responsibility in advancing research in these areas.

Regarding countries' scientific production and citations, the data underscores the complex relationship between academic relevance and impact. While some nations exhibit substantial scientific production, the true impact of research is often measured through citation metrics. The United States and the United Kingdom, despite producing fewer articles, demonstrate significantly higher average article citation rates, indicating the substantial influence and resonance of their research within the academic community. In summary, this analysis sheds light on the multifaceted aspects of academic research in innovation, value, and sustainability. It emphasizes the importance of both quantity and quality in assessing the academic contribution of sources, authors, affiliations, and countries to this evolving and critical field of study.

*d) Conceptual structure*

The Co-occurrence Network data spanning the period from 2013 to 2023 offers insights into the interconnectedness and relevance of various thematic clusters in academic discourse related to innovation, value, and sustainability. Several observations can be made: The term "esg" (Environmental, Social, and Governance) emerges as a central node in this cluster with a high Betweenness Centrality of 402.49, indicating its importance as a connector between other terms.

This highlights the central function of ESG discussions in the context of innovation, value, and sustainability; "Sustainability" is another prominent term in Cluster 1. While it has a lower Betweenness Centrality compared to "esg," it remains an essential concept in the discourse, reflecting its enduring relevance; "Innovation" is well-connected within Cluster 1, with a moderate Betweenness Centrality.

This suggests that innovation is an integral part of discussions surrounding ESG and sustainability; Within Cluster 2, "green innovation" stands out with a Betweenness Centrality of 213.42. This indicates the relevance of green innovation discussions in the context of sustainability and ESG; The term "environmental" emerges as a central node with a considerable Betweenness Centrality. It is closely linked to other terms like "social" and "corporate social responsibility (CSR)," highlighting the interconnectedness of environmental and social aspects in the discourse; "Sustainable development" plays a central position in Cluster 4, reflecting its importance in discussions related to firm performance and environmental innovation; The term "esg performance" is connected to discussions about financial performance, emphasizing the growing interest in evaluating ESG-related performance metrics; Within Cluster 6, "institutional investors" emerges as a concept, highlighting a discussions related to network effects and attention effects. In summary, the Co-occurrence Network data underscores the interconnectedness of key terms related to innovation, value, and sustainability. "ESG," "sustainability," "innovation," "green innovation," "environmental," "sustainable development," and "institutional investors" are central themes that have evolved and persisted in academic discourse, reflecting the dynamic nature of research in these domains over the years.

The exported data consists of information pertaining to seven distinct thematic clusters on a thematic map. These clusters include "Economic and Social Effects," "Sustainable

Development," "Environmental Performance," "Innovation," "Commerce," "Entrepreneurship," and "Costs." Within the "Economic and Social Effects" cluster, various terms and concepts are explored, such as "esg," "climate change," "correlation analysis," and "ecological risks." These terms represent topics that are central to discussions related to economic and social impacts. Moving on to the "Sustainable Development" cluster, it encompasses a wide range of topics, including "sustainability," "investment," "environmental," and "corporate social responsibility." This cluster underscores the multifaceted nature of sustainable development, incorporating economic, environmental, and social dimensions. In the "Environmental Performance" cluster, terms like "environmental management," "social," and "efficiency" are present. This suggests a focus on evaluating and optimizing environmental performance within organizations. The "Innovation" cluster is particularly extensive and covers a broad spectrum of topics related to innovation. Key terms in this cluster include "impact," "performance," "governance," and "corporate social responsibility," reflecting the importance of innovation in diverse contexts.

In the "Commerce" cluster, themes such as "organizations," "manufacturing," and "greenhouse gas" are highlighted, indicating a focus on the economic aspects of commerce, particularly in relation to environmental considerations. The "Entrepreneurship" cluster explores topics like "industry 4.0" and "leadership," emphasizing the entrepreneurial aspects of business and industry. Lastly, the "Costs" cluster includes terms like "costs" and "standards," suggesting discussions related to cost management and adherence to industry standards. These thematic clusters represent distinct areas of research and analysis, each with its own set of associated keywords and concepts. Researchers and analysts likely explore into these clusters to gain insights into specific themes and trends within their respective domains.

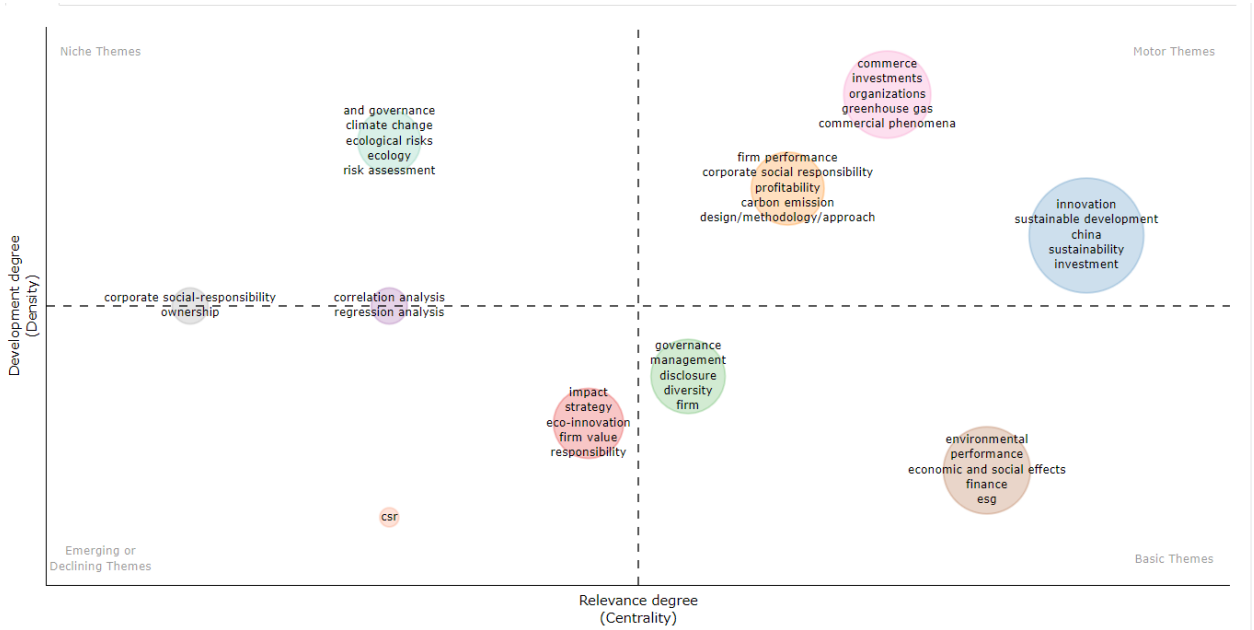
When comparing the thematic evolution of research on innovation, value, and sustainability between two distinct time slices, we observe differences and continuities. In the period from 2013 to 2022, a prominent thematic cluster revolved around "Sustainable Development." This cluster encompassed discussions related to sustainability, governance, investment, and corporate social responsibility, suggesting a holistic approach to the topic. Simultaneously, the theme of "Innovation" held a central position during this timeframe. It included subtopics such as "impact," "performance," "corporate social responsibility," and "financial performance." This indicated that innovation was closely intertwined with discussions on sustainability and value creation. A smaller thematic cluster, "Competitiveness," featured terms like "stakeholder" and "strategic approach," revealing a nuanced exploration of competitiveness within this context. Additionally, the "Valuation" cluster focused on finance and manufacturing, providing insights into how these aspects were linked to sustainability and innovation.

Moving to the 2023 time slice, we see shifts in the thematic landscape, illustrated in Figure 6. The "Impact" cluster emerged as a dominant theme, with subtopics including "strategy," "eco-innovation," "firm value," and "responsibility." This suggests a growing emphasis on understanding and measuring the impact of sustainability and innovation strategies. The "Innovation" cluster, already prominent, continued to play a central position. Terms like "sustainability," "China," and "investment" remained components, emphasizing the ongoing relevance of innovation in this field. The "Governance" cluster expanded substantially, encompassing discussions on management, disclosure, diversity, and corporate social responsibility. This indicated a heightened interest in governance-related aspects within the context of sustainability and innovation. A new thematic cluster, "Correlation Analysis,"

emerged, highlighting a quantitative dimension in research methodologies. "Environmental" discussions encompassed topics such as economic and social effects, financial performance, and environmental economics, reaffirming the enduring importance of environmental considerations. The "Commerce" cluster incorporated themes related to investments, organizations, greenhouse gas, and ethics, underscoring the critical duty of commerce in sustainability and value creation. Furthermore, the "Corporate Social Responsibility" cluster examined into ownership and its connection with corporate governance. Lastly, the "And Governance" cluster explored multidimensional aspects like climate change, ecological risks, ecology, risk assessment, social responsibility, and CSR.

**Figure 6**

*Thematic Evolution, time slice 2023*




*Source*: Data select from Scopus and Web of Science and processed by Biblioshiny

In summary, the thematic evolution reveals an evolving research landscape. While certain themes like "Innovation" and "Sustainability" remained constant, the focus shifted towards "Impact," "Governance," and quantitative analysis in 2023. These changes highlight the dynamic nature of research in the fields of innovation, value, and sustainability, as academia adapts to emerging trends and research priorities.

The themes of innovation, sustainability, and value are interconnected. Many studies explore how sustainability, particularly Environmental, Social, and Governance (ESG) factors, can influence innovation and contribute to enhanced value creation within various industries. They collectively suggest that a strong focus on sustainability, ethical practices, and ESG considerations can lead to innovative approaches that positively impact a firm's overall value and financial performance.

The study explores the concepts of innovation, sustainability, and value creation in various contexts and some patterns and themes emerge from this research. Firstly, there is a consistent focus on the interplay between ESG (Environmental, Social, and Governance) factors and business practices. The studies highlight that ESG pillars are increasingly relevant and can aid in business model innovation. This is particularly noteworthy in biopharmaceutical firms (Bhattacharya & Bhattacharya, 2023) and the European food industry (Sandberg et al., 2023). Secondly, the function of corporate governance in promoting ESG practices and value creation is emphasized in multiple studies, and corporate governance is seen as important element in enhancing the value of sustainable practices (Park et al., 2023). Another pattern is the recognition of the positive relationship between higher ESG ratings and improved financial performance (Sandberg et al., 2023), what underscores the importance of integrating ESG metrics into business strategies. Furthermore, there is an exploration of how stakeholder capitalism and

partnerships can contribute to achieving Sustainable Development Goals (SDGs) (Beck & Ferasso, 2023). This highlights the broader societal impact of ESG and sustainability efforts.

Some studies suggest that innovation can be an indirect driver of value creation in ESG businesses (Broadstock et al., 2020), while others examine how innovation and sustainability are intertwined (Chouaibi & Chouaibi, 2021). Moreover, there's a focus on industry-specific challenges and opportunities. For instance, the construction industry is discussed as an early-stage adopter of ESG practices (Park et al., 2023), while shipping companies are examined in terms of CSR and ESG practices (Tsatsaronis et al., 2022). Lastly, the impact of mergers and acquisitions (M&As) on ESG factors and value creation is explored in several studies (Liu & Zhang, 2023; Manocha & Srai, 2020; Tsatsaronis et al., 2022). These research efforts highlight how ESG considerations can inform M&A deals and influence their outcomes. In summary, the research emphasizes the complex relationship between innovation, sustainability, and value creation across various industries and contexts, with a particular focus on the growing importance of ESG factors in shaping business strategies and financial performance.

ESG, which stands for Environmental, Social, and Governance, is a holistic framework that assesses a company's performance and behaviour in relation to critical non-financial factors. This framework acknowledges that businesses should not be evaluated solely on economic indicators but also on their impact on the environment, society, and their governance practices (Eccles et al., 2020). The origins of ESG can be traced back to earlier concepts such as Socially Responsible Investing (SRI) and Corporate Social Responsibility (CSR), which incorporated social considerations into investment decisions, especially among faith-based organizations, as far back as the 19th century. However, the term "ESG" gained prominence with the United Nations Global Compact's 2004 report, "Who Cares Wins," (The Global Compact United

Nations, 2004) which called for the integration of environmental, social, and corporate governance issues into asset management and investment decisions.

This report laid the foundation for the Principles for Responsible Investment (PRI) and marked a turning point in the recognition of the financial relevance of ESG factors in investment decisions. Since then, the demand for ESG data has led to the growth of an entire industry, with numerous organizations collecting and providing ESG data. Understanding the differences among these data sources is important for investors seeking to incorporate ESG considerations into their decision-making processes, as these differences often reflect the social and contextual origins of the data vendors.

Investigation into ESG Engagement in Malaysia highlights the importance of corporate governance in enhancing value generation and financial outcomes within the specific Malaysian setting. It emphasizes the key contribution of non-financial factors in effective corporate governance (Ismail et al., 2019). Two studies (Chouaibi & Chouaibi, 2021; Sandberg et al., 2023) examine the relationship between ESG factors and financial performance across different industries. Both studies find a positive correlation, indicating that higher ESG ratings and practices are associated with improved financial performance. Another pattern focuses on the connection between innovation and sustainability. The adoption of ESG policies can influence innovation capacity, suggesting a non-linear relationship (Broadstock et al., 2020), wherein ESG policies indirectly contribute to value creation through innovation.

Two studies (Beck & Ferasso, 2023; Liu & Zhang, 2023) are industry-specific, concentrating on sustainability within sectors such as global governance and construction. These studies emphasize the responsability of sustainability in addressing industry-specific challenges and achieving broader global sustainability goals. Another pattern relates to corporate

governance and ESG practices and how corporate governance and ESG engagement are interconnected, emphasizing corporate governance's duty in enhancing ESG practices and value creation (Park et al., 2023). The impact of ESG practices on corporate performance and value, particularly within the context of mergers and acquisitions (M&As) (Ping et al., 2023; Tsatsaronis et al., 2022) and how ESG considerations can inform M&A deals (Ping et al., 2023), suggest that factors like product design and technology selection are influenced by ESG concerns.

A separate pattern centres around stakeholder capitalism and its position in achieving Sustainable Development Goals (SDGs) explores how stakeholder capitalism can contribute to SDGs, emphasizing partnerships, consensus, and sustainable growth (Beck & Ferasso, 2023). Lastly, the environmental supply chain innovation for sustainability can inform M&A deals, emphasizing the importance of factors like product design and technology selection in value creation during M&As (Manocha & Srai, 2020). These patterns collectively highlight the complex and multifaceted relationship between innovation, sustainability, and value across various industries and contexts.

In the investigation of diverse contexts pertaining to sustainable development goals (SDGs), several recurrent themes and patterns consistently emerge across the selected studies. These recurring themes encapsulate fundamental aspects of sustainable development and reflect the broader global discourse surrounding the pursuit of the SDGs in various sectors and scenarios. Foremost among these themes is the profound emphasis on sustainability itself. Sustainability stands as a central and unifying theme that resonates throughout the studies. It is evident in the context of sustainable food systems within farmers' markets, the adoption of sustainable practices by business entities, and the evaluation of sustainability criteria within the

domain of real estate investments (Cadamuro Morgante et al., 2023; Ezuma & Matthew, 2022; Foti & Timpanaro, 2021). This recurrent emphasis underscores the paramount importance accorded to sustainability as a guiding principle.

A second theme that emerges prominently is the intrinsic connection between innovation and sustainability. The studies collectively highlight innovation as a catalyst for the realization of sustainability objectives. This nexus between innovation and sustainability is evident in the studies' exploration of innovation, industry, and infrastructure as fundamental factors in the promotion of sustainability (Cadamuro Morgante et al., 2023; Huang et al., 2022). It is a theme that reinforces the notion that innovation is a driving force in the pursuit of sustainable goals across diverse contexts. Value creation surfaces as another recurrent theme across the studies. They collectively illuminate the idea that sustainability initiatives yield value creation as an outcome. Whether through the establishment of efficient and enduring relationship systems within farmers' markets or through the meticulous identification of indicators guiding high-impact sustainable investments, the concept of value creation is consistently underscored (Cadamuro Morgante et al., 2023; Foti & Timpanaro, 2021). It reinforces the notion that sustainable practices often lead to tangible and intangible value for stakeholders.

Finally, the responsibility of government in facilitating and advancing sustainability emerges as a common thread. Government policies, regulations, and strategic initiatives play a central responsibility in fostering sustainability within the contexts examined in these studies. Whether through the implementation of green financing schemes in Malaysia or through the influence of European Union policies on real estate sector development, the duty of government is conspicuous (Cadamuro Morgante et al., 2023; Ezuma & Matthew, 2022). This theme underscores the implication of governmental actions and interventions in shaping sustainability

outcomes. In summation, these recurrent themes encapsulate the complex interplay of sustainability, innovation, and value creation, all framed within the context of government's instrumental responsibility in enabling and advancing sustainable practices. These patterns are not isolated but rather represent integral facets of the broader international discourse encompassing the pursuit of the Sustainable Development Goals (SDGs) and the imperative to instil sustainable principles across diverse and multifaceted domains.

In summary, the study underscores the relationships between innovation, sustainability, and value creation, demonstrating their inherent interconnections across various contexts and industries. These concepts are inextricably linked, with sustainability often driving innovation and generating value. Furthermore, the review highlights the vital function of ESG factors in shaping corporate strategies and financial performance, emphasizing the importance of integrating these considerations into decision-making processes. Additionally, the examination of diverse contexts and the pursuit of Sustainable Development Goals (SDGs) reveal recurring themes, including sustainability as a central guiding principle, the nexus between innovation and sustainability, The continual creation of benefits from sustainability efforts, and the impact of governmental policies on promoting sustainability. These patterns collectively contribute to a holistic understanding of the complex and multifaceted nature of innovation, sustainability, and value creation in contemporary discourse and practice.

## Conclusion

Our bibliometric analysis of academic publications spanning the years 2013 to 2023 has yielded insights into the evolving landscape of research related to innovation, value, and sustainability. Through the pursuit of various objectives, we have uncovered trends and patterns that shed light on the growth, impact, and thematic evolution within these domains.

The analysis of annual scientific production has revealed an increase in scientific output over the examined period, with a particular surge in 2022 and a peak in 2023. These findings signify a vibrant and expanding research landscape in the fields of innovation, value, and sustainability. Additionally, our exploration of Mean Citations Per Year and Mean Citations Per Year for Citable Years has uncovered variations, highlighting the dynamic nature of research impact and citation rates in these areas.

Examining the sources, authors, affiliations, and countries involved in this research, we have elucidated the multidisciplinary nature of the subject matter, with diverse sources contributing to the discourse. The application of Bradford's Law and Lotka's Law has confirmed established publishing patterns, emphasizing the duty of highly productive sources and authors in their respective domains, while acknowledging the presence of less prolific ones. Furthermore, our analysis of affiliations and countries has highlighted the nuanced relationship between scientific production and citation impact, underscoring the importance of both quantity and quality in assessing academic contributions.

The examination of the conceptual structure through Co-occurrence Network data has identified key themes such as "ESG," "sustainability," "innovation," "green innovation," "environmental," "sustainable development," and "institutional investors" as central to the academic discourse. These themes have persisted and evolved over time, reflecting their enduring relevance. The comparative analysis of thematic clusters between 2013-2022 and 2023 has elucidated shifts and continuities in research priorities, with a growing emphasis on "Impact," "Governance," and quantitative analysis in 2023.

In conclusion, our analysis of academic research of innovation, value, and sustainability highlights the importance of key themes, the nature of research priorities, and the

multidimensional character of scholarly discourse. These insights could be interesting for researchers, policymakers, and stakeholders of scientific contributions in these domains, guiding future research endeavours, and fostering international collaboration and knowledge exchange.

While our bibliometric analysis sheds light on the academic research terrain concerning innovation, value, and sustainability, it is essential to consider its limitations. Firstly, our study relies on data extracted from Scopus and Web of Science, which may not encompass all relevant academic publications in these domains. Alternative databases and sources could offer a more detailed view of the scholarly landscape. Secondly, the analysis primarily focuses on quantitative metrics, such as publication counts and citation rates, to assess research impact. Complementary qualitative assessments, such as content analysis or expert opinions, could provide a more holistic understanding of the quality and relevance of the publications. Thirdly, while we have identified influential sources, authors, and themes, our study does not explorer into the content of the publications themselves. Future research could conduct in-depth content analyses to explore the specific topics and methodologies employed in these studies. Moreover, our study covers a specific time frame from 2013 to 2023. Examining historical trends and anticipating future developments would require extending the analysis further back in time and projecting forward. Additionally, while we have identified patterns in authorship and collaboration, we have not explored the reasons behind these patterns. Investigating the drivers of international collaboration and the factors influencing prolific authorship would provide e insights.

The study highlighted the importance of adopting ESG practices, financial performance, and value creation. Future studies could be developed on the relationship between the adoption of ESG practices and financial performance, as well as the relationship between value creation and the adoption of ESG practices. Financial performance and value creation are distinct metrics.

Typically, financial performance variables are derived from financial statements, such as ROA, ROE or Net Interest Margin, while value creation variables are derived from the market value of organizations' shares, such as Tobin's Q, MBV or Stock Price.

Conclusively, our study provides a foundational understanding of the scholarly landscape in innovation, value, and sustainability. To address these limitations and advance our knowledge in these domains, future research could consider alternative data sources, incorporate qualitative analyses, extend the temporal scope, conduct content analyses, and investigate the underlying drivers of authorship and collaboration patterns.

## Authors' contributions

| Contribution | Neves Gonçalves, M. | Basso, L. F. C. |
|---|---|---|
| Contextualization | X | X |
| Methodology | X | X |
| Software | X | - |
| Validation | X | X |
| Formal analysis | X | - |
| Investigation | X | - |
| Resources | X | X |
| Data curation | X | X |
| Original | X | X |
| Revision and editing | X | X |
| Viewing | X | X |
| Supervision | - | X |
| Project management | - | X |
| Obtaining funding | X | X |

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