

A Bibliometric Analysis of the Balanced Scorecard

Loso Judijanto
IPOSS Jakarta, Indonesia

Article Info

Article history:

Received July, 2026
Revised July, 2026
Accepted July, 2026

Keywords:

Balanced Scorecard
Bibliometric Analysis
Strategic Management
Performance Measurement
VOSviewer

ABSTRACT

The Balanced Scorecard (BSC) has become one of the most influential strategic management frameworks for measuring and improving organizational performance by integrating financial and non-financial perspectives. Over the past decades, BSC research has expanded into various fields, including strategic management, sustainability, performance evaluation, organizational effectiveness, and information management. However, the overall development, intellectual structure, and emerging research directions of Balanced Scorecard literature remain insufficiently explored. This study aims to examine the evolution and research landscape of Balanced Scorecard studies through a bibliometric analysis approach. Data were collected from the Scopus database using relevant keywords related to Balanced Scorecard and analyzed using bibliometric techniques with VOSviewer, including citation analysis, co-authorship analysis, keyword co-occurrence analysis, density visualization, and country collaboration mapping. The findings indicate that Balanced Scorecard research has experienced significant intellectual development, shifting from an initial focus on performance measurement and key performance indicators toward broader themes involving strategic planning, sustainability, environmental management, and organizational alignment. Citation analysis reveals that influential works by Kaplan and Norton, as well as studies related to stakeholder theory, sustainability balanced scorecard, and strategic performance measurement systems, represent the main theoretical foundations of this field. Furthermore, collaboration analysis highlights the global nature of Balanced Scorecard research, with the United States emerging as a central contributor connected with researchers and institutions worldwide. This study contributes to the literature by providing a comprehensive understanding of the development trajectory, dominant themes, and future opportunities in Balanced Scorecard research. Future studies are encouraged to investigate the integration of Balanced Scorecard with digital transformation, artificial intelligence, sustainability frameworks, and data-driven strategic management.

This is an open access article under the [CC BY-SA](#) license.



Corresponding Author:

Name: Loso Judijanto
Institution Address: IPOSS Jakarta, Indonesia
e-mail: losojudijantobumn@gmail.com

1. INTRODUCTION

Balanced Score Card (BSC) has proved to be one of the most successful

frameworks used in strategy management and performance measurement during the past three decades. BSC is a brainchild of Robert S. Kaplan and David P. Norton; it was developed in 1992. According to [1], the main reason behind inventing BSC was the need for overcoming the drawbacks of the conventional system of performance measurement, which focused on the financial results rather than the dynamics of the organization as a whole. Kaplan and Norton suggested balancing the financial and non-financial metrics, such as customer satisfaction, process improvement, and learning and growth. It is said that in the article "The Balanced Score Card – Measures That Drive Performance" published in Harvard Business Review that what gets measured drives management action.

After its initial conception, the Balanced Scorecard transformed itself from being a tool for measurements to become a complete strategic management system. Additional publications such as "The Balanced Scorecard: Translating Strategy into Action" (1996), "The Strategy Focused Organization" (2001) and "Strategy Maps" (2004) added to the theoretical underpinnings of BSC and clarified its application in aligning operations with strategic objectives, enabling communications within organizational structures and building bridges between strategy development and implementation. Such progression illustrates a transition from using BSC for performance measures purposes only to its application as a means for strategic alignment and implementation, which makes it an essential vehicle for strategy communication and implementation [2], [3].

Ideally, the theory behind the Balanced Scorecard is based on the idea that financial measures are insufficient to assess the overall performance of any firm. Since the Balanced Scorecard approach is comprised of several performance aspects like financial, customer, internal business process, and learning and growth, the use of Balanced Scorecard prompts managers to pay attention to both short- and long-term success factors. Such an understanding of performance is also

built on the assumption that performance cannot be sustained through the use of only financial measures because the latter do not reflect the strategic capabilities of a firm, such as innovations and development of customers and people [4], [5], [6].

The Balanced Scorecard has gained widespread acceptance. Research indicates its usage in varied industries such as manufacturing, service, health care, education, and government organizations, proving its versatility as a performance management approach. The reason behind the flexibility of the Balanced Scorecard is due to its capability of converting organization's vision and strategy into a set of objective and goals which reflect both the strategic intention and reality of the organization [7], [8], [9], [10]. Customization of the Balanced Scorecard to context-specific goals and expectations of stakeholders proves its ability to link abstract strategy and concrete performance measurement. The continuous improvement of Balanced Scorecard through strategic maps and linkage of performance metrics to strategic results shows the dynamic nature of Balanced Scorecard for managing complicated organizational strategies [11].

The increasing academic attention paid to issues in performance management and strategic instruments is paralleled by an upsurge of interest in researching the conceptual basis, application, and adaptations of the Balanced Scorecard. Literature reviews suggest that there is a considerable body of published works dedicated to the theoretical basis of BSC, the difficulties involved in implementing BSC and its effects on organizational efficiency. Furthermore, the research environment around the BSC has become increasingly diverse, moving from the domain of management studies into the realm of interdisciplinary research connecting such areas as sustainability, information systems, and organizational behavior. Recent literature reviews imply that the topic areas of research have widened to encompass such concepts as customer orientation, integrated reporting, sustainable development, and systems thinking within BSC research framework.

The application of bibliometric analysis as a methodology has become increasingly popular in the last years because of its ability to map out and visualize research output and find trends, patterns and relations between them in the scientific literature. Bibliometric analysis is based on quantitative methods like citation analysis, co-authorship networks and keyword co-occurrence which help assess the size and structure of certain research domains. Due to the emergence of comprehensive databases like Scopus and Web of Science, together with bibliometric visualization tools like VOSviewer and Biblioshiny, large-scale analysis of intellectual structure and evolution of research fields has become possible. As for Balanced Scorecard literature, bibliometric analysis has helped gain insight into the development of this field in terms of publication trend, influential authors and organizations, geographical distribution of research and themes over time [12].

In spite of a huge amount of scientific literature related to the topic of Balanced Scorecard (both conceptual approaches, empirical studies, and bibliometric reviews), there is still a lack of comprehensive bibliometric mapping taking into account the recent scientific achievements and trends of further research in this area. In general, previous works devoted to BSC analysis were concentrated on particular aspects of this field or a certain period of time, and did not take into account the dynamics of the development of this field as new research topics become more important (e.g., the issue of sustainable development, digitalization, etc.). Also, there is a lack of synthesis regarding the dynamics of the influence of scientists, collaborations, and thematic clusters in the field of Balanced Scorecard. The main goal of this work is to perform a comprehensive bibliometric review of the Balanced Scorecard literature.

2. METHODS

The research utilized the bibliometric methodology in conducting a systematic review of the academic literature regarding

the topic of Balanced Scorecard (BSC). Bibliometric analysis is a statistical method used in assessing the development, structure, and dynamics of a particular field of research using publication, citation, and co-authorship statistics. The main source of data for the research was the Scopus database, which is renowned for its extensive scope of coverage in peer-reviewed journals, proceedings, and book chapters of various disciplines. The Scopus database was chosen because of its strong indexing of management and business-related materials.

Data collection procedure entailed an organized search in Scopus with the use of keyword "Balanced Scorecard" in the title, abstract, and keywords sections. Criteria for inclusion covered peer-reviewed articles written in English regardless of their date of publishing to ensure the historical aspect of BSC study. Any duplicate and irrelevant articles, for instance, those that have mentioned BSC in passing only, were excluded from the sample. Main bibliographic characteristics were included in the dataset: authors, affiliations, year of publication, name of journal, citations, and keywords.

For the analysis and visualization of bibliometric data, the use of VOSviewer software (version 1.6.19) was necessary. This program is dedicated to the construction and visualization of bibliometric networks. It allows one to map coauthorship relations, co-citation relations, and keyword occurrence. With the help of the software, network maps were created that allowed one to see the intellectual structure of BSC studies, the patterns of collaboration between the authors and their affiliation to various institutions, and thematic clusters due to the keyword occurrence. The use of both Scopus as a database and VOSviewer as the tool for visualization was very effective and methodologically correct approach.

3. RESULTS AND DISCUSSION

3.1 Network Visualization

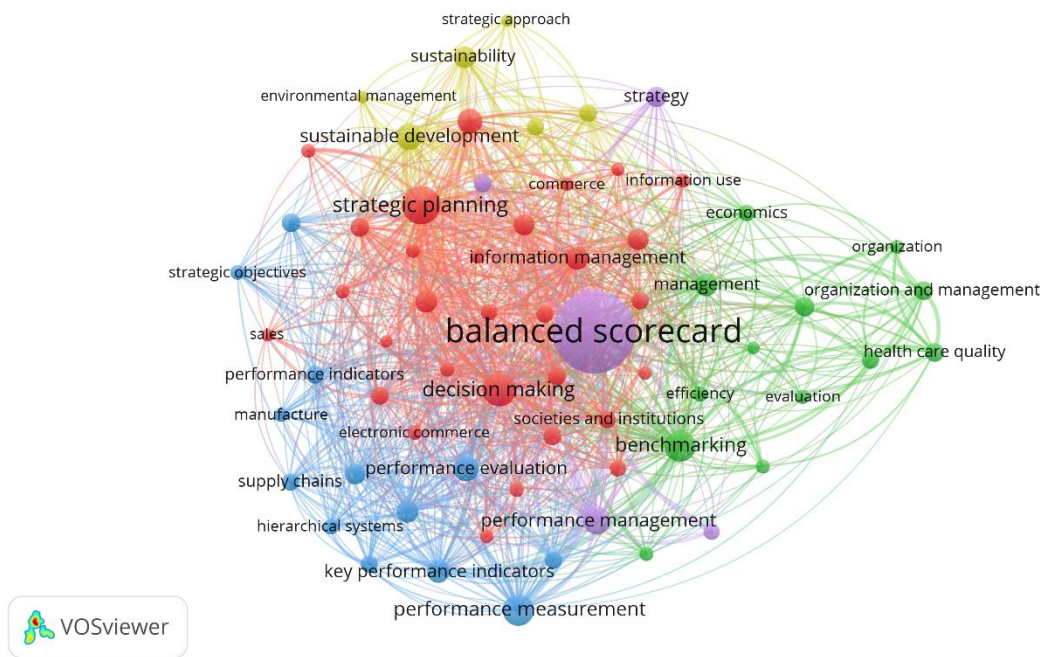


Figure 1. Network Visualization

Source: Data Analysis Result, 2026

Figure 1 shows the intellectual framework and theme development in research on the Balanced Scorecard. The size of the node reflects the keyword frequencies whereas the connections between the nodes indicate the relationship strengths between keywords. The keyword “balanced scorecard” is shown as the biggest and most important node due to the dominance and association of the term with different research themes. The presence of a cluster of nodes around the keyword indicates that Balanced Scorecard research has become an interdisciplinary area linked to strategic management, performance measures, organizational effectiveness, sustainability, and decision making.

Theme in green color reflects themes in research related to management, evaluation, efficiency and performance of organizations. Keywords like organization, organization and management, quality of health care, evaluation, benchmarking and efficiency show that the Balanced Scorecard has been used extensively as a management technique for evaluation and improvement in organizational performance. The above theme suggests that most research studies are

centered on application of the Balanced Scorecard as an evaluation tool for aligning organizational goals with performance measures.

This red cluster emphasizes the link between the Balanced Scorecard approach and the fields of strategic management, information systems, and decision-making processes. Strategic planning, information management, decision making, management, strategic objectives, and commerce are some of the critical key terms associated with this theme. The theme suggests that Balanced Scorecard studies have moved from the area of performance measurement to areas of strategic implementation and decision-making. Organizations increasingly adopt the Balanced Scorecard approach to operationalize their strategic visions through information systems and performance management.

This blue cluster is made up of articles and works based on performance measurement, operational improvement, and key performance indicators. Words like performance measurement, performance indicators, key performance indicators, performance evaluation, manufacture, and

supply chains show how Balanced Scorecard continues to be linked to the measurement of organizational performance via structured performance indicators. Here we see the use of Balanced Scorecard in operational settings, where firms need an approach to measure their performance through financial and non-financial performance measurements.

Yellow and purple clusters point out new directions in the area of research on

Balanced Scorecard. Words like sustainability, sustainable development, environmental management, and strategy show that there is increasing integration of Balanced Scorecard with sustainable management. At the same time, the purple cluster focuses on the strategic perspective, indicating the development of Balanced Scorecard as a tool of gaining competitive advantage.

3.2 Overlay Visualization

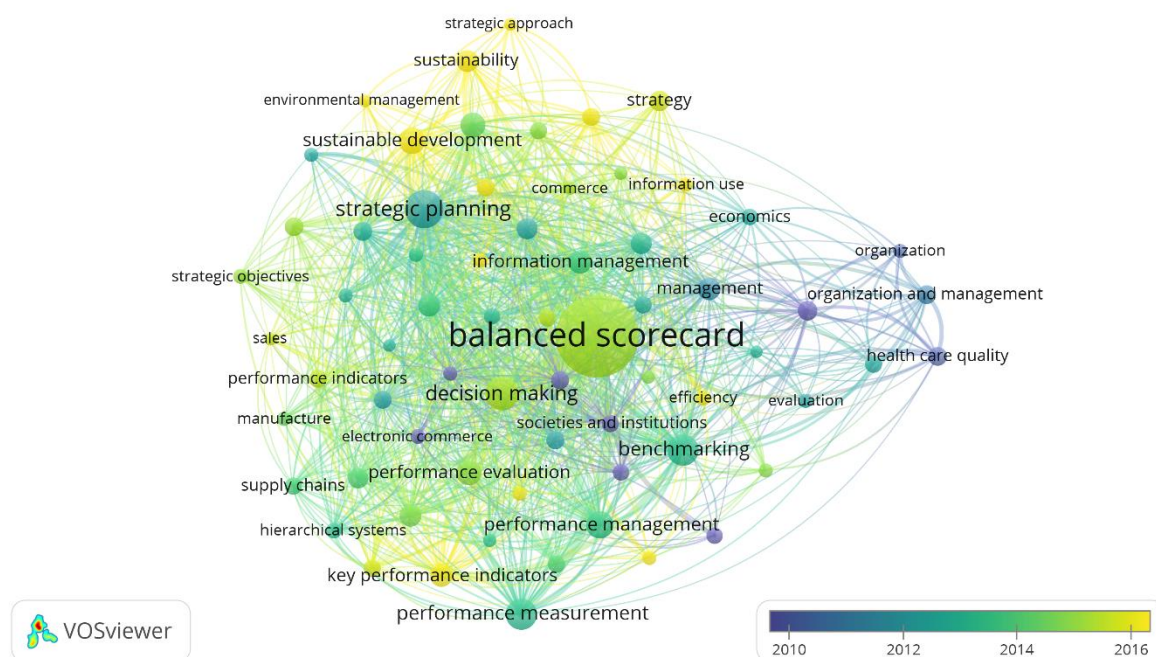


Figure 2. Overlay Visualization

Source: Data Analysis Result, 2026

The Figure 2 below shows the trends in BSC research over time using the average year of publication of the keywords used. The color scheme shows the developmental stages of research topics, with darker blue showing older topics and yellow indicating newer trends in research. The keyword “balanced scorecard” is consistently shown to be the main keyword in all the periods of research evolution. This means that the topic has stayed relevant throughout the years. From the visualization, it can be seen that initially, researchers were mainly concerned about performance measurement, evaluation, and organizational effectiveness.

Themes from the earlier studies, depicted by the blue and green zones, have a strong connection with performance measurement, KPIs, benchmarking, and organization assessment. Performance measurement, performance assessment, KPIs, benchmarking, and performance management keywords show that the focus of early Balanced Scorecard studies was on the development of measurement systems other than just financial measurements. These studies portrayed Balanced Scorecard as a mechanism that could enhance efficiency, control performance and manage the organization.

The newer research trends, depicted through the yellow colored regions, show a trend towards strategic planning, sustainability, environmental management, and strategizing. Words such as sustainability, sustainable development, environmental management, strategic planning, and strategies are identified as emerging themes, suggesting that the

research on Balanced Scorecard is incorporating organizational issues to an increasing extent in recent times. This is indicative of the fact that the Balanced Scorecard is evolving from a tool for measuring organizational performance to one that helps in sustainable development and competitiveness.

3.3 Citation Analysis

Table 1. Top Cited Research

Citations	Authors and year	Title
1556	[13]	Value maximization, stakeholder theory, and the corporate objective function
1039	[14]	Transforming the balanced scorecard from performance measurement to strategic management: Part I
883	[6]	The sustainability balanced scorecard - Linking sustainability management to business strategy
761	[15]	Having trouble with your strategy? Then map it.
751	[16]	The balance on the balanced scorecard - A critical analysis of some of its assumptions
741	[17]	Performance implications of strategic performance measurement in financial services firms
699	[18]	Measuring organizational performance: Beyond the triple bottom line
625	[19]	Value maximisation, stakeholder theory, and the corporate objective function
614	[20]	Measuring the Strategic Readiness of Intangible Assets
600	[21]	Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: An exploratory study

Source: Scopus, 2026

Table 1 shows the most influential papers in Balanced Scorecard (BSC) research on the basis of citation frequency, which illustrates the crucial intellectual foundations for the development of this area of research. The most cited paper is [13] with 1,556 citations, which underlines the significance of stakeholder theory and value maximization in relation to organizational goals from perspectives other than the financial one. Publications of Kaplan and Norton, especially their papers published in 2000, 2001, and 2004, hold a leading place, which shows a great

contribution to the transformation of BSC from a performance measurement tool to a strategy management approach. Highly cited publications by [6] and [18] show an increasing use of sustainability considerations as well as the perspectives of organizational performance in applying BSC approach. Critical literature such as [22] represents theoretical assessments of BSC assumptions, whereas [23] and [24] move the discussion further towards the issue of strategic performance measurement systems.

3.4 Density Visualization

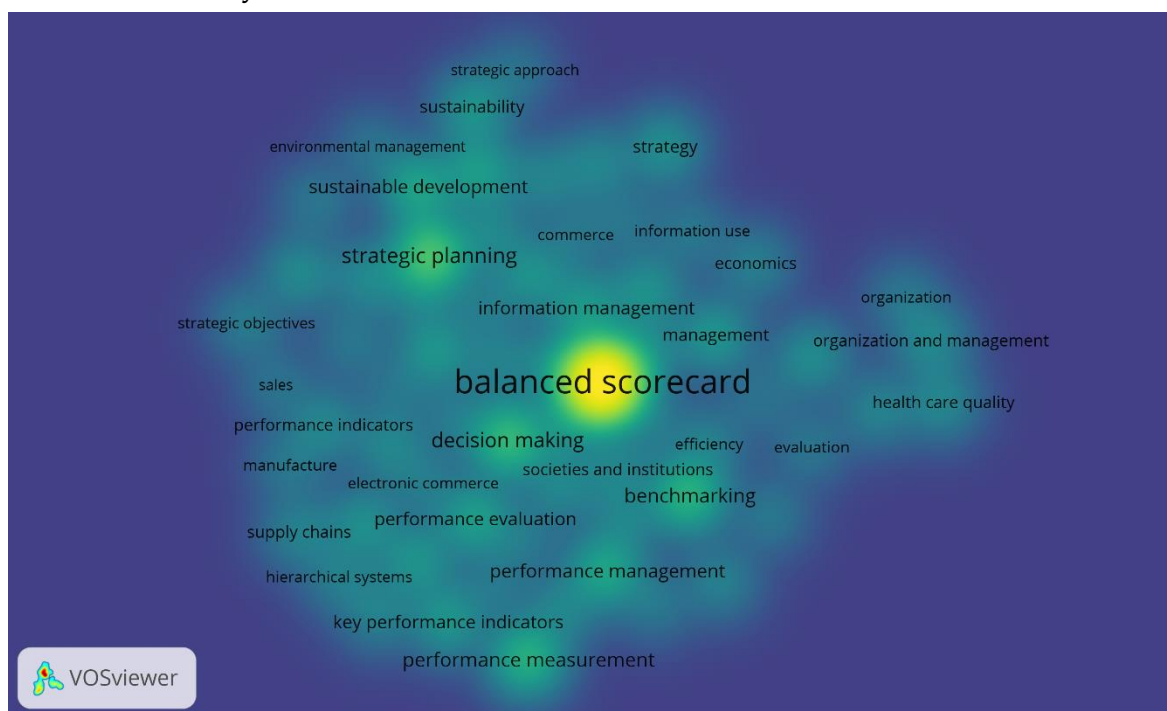


Figure 3. Density Visualization

Source: Data Analysis Result, 2026

Figure 3 displays the density and significance of research topics in BSC-related studies. The area that appears to be the brightest one is right near the keyword "balanced scorecard," which suggests that it is the most frequently analyzed and interconnected topic in the domain of BSC studies. High-density areas near it prove that there is a significant connection between topics including performance measurement, performance management, decision making, strategic planning, and information management. This means that BSC research has evolved mostly in accordance with its primary role as a strategy-implementation tool.

Beyond the central theme, the visualization shows several important research concentrations related to strategic management, sustainability, and organizational improvement. Areas associated with sustainability, sustainable development, environmental management, and strategic approach indicate the expansion of BSC studies toward contemporary strategic challenges. Meanwhile, topics such as key performance indicators, performance evaluation, benchmarking, efficiency, and health care quality reflect the practical application of Balanced Scorecard across different organizational contexts.

3.5 Author Visualization

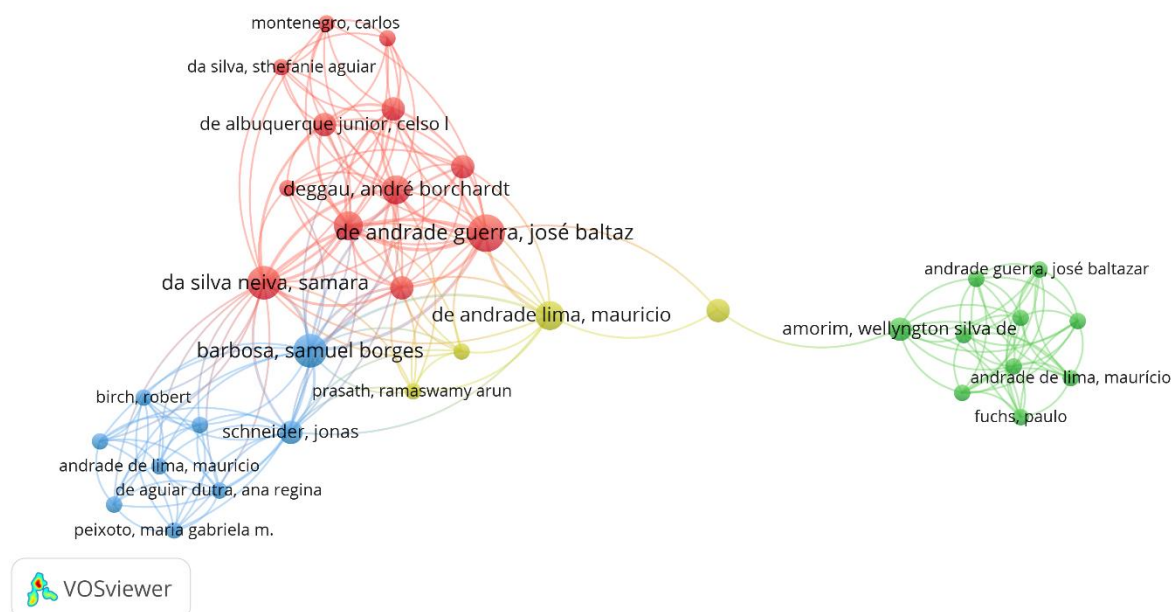


Figure 4. Author Visualization

Source: Data Analysis Result, 2026

Figure 4 below shows the pattern of collaborations between researchers in the field of the Balanced Scorecard research. As seen from the graph, there are a number of different clusters that indicate different groups of authors who collaborate with each other. In particular, the red cluster shows the largest collaborative cluster, which includes the following authors: De Andrade Guerra, José Baltazar, Da Silva Neiva, Samara, De Andrade Borchardt, and Montenegro, Carlos. It should be assumed that this cluster reveals a strong collaboration network, which relates to strategic management and application of the Balanced Scorecard. There is the blue cluster that includes such authors as Barbosa, Samuel Borges, Schneider, Jonas, and Birch, Robert. This cluster indicates a research collaboration network associated with

organizational performance and management system. There is the green cluster as well that includes the following authors: Andrade Guerra, José Baltazar, Amorim, Wellington Silva de, and Fuchs, Paulo. The network visualization also emphasizes the influence of many important authors who serve as connectors among various research groups. Authors like De Andrade Lima, Mauricio and De Andrade Guerra, José Baltazar, can be seen to have several connectors, implying their substantial involvement in knowledge exchange and collaboration in various clusters. The existence of connectors among various clusters implies that research on the Balanced Scorecard has progressed due to interdisciplinary collaboration rather than individual academic groups.

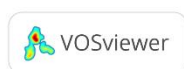


Figure 5. Institution Visualization

Source: Data Analysis Result, 2026

Figure 5 provides a picture of the relationship among universities and research institutions involved in the Balanced Scorecard literature. It is noted that there exists a relatively small and yet well-connected network, as many research institutions have been identified as brokers between various research institutions. The University of Alabama, United States is an example of such research institution that connects institutions like Performance Delta LLC, Ridgeland and Troy University, United

States. On the other hand, Arizona State University, United States can be seen as another cluster of institutions that have connections due to their collaboration with each other. Linear design of the network implies that collaboration between institutions in research on the Balanced Scorecard is limited to a few institutions and not distributed internationally. Links between institutions show knowledge flow and research partnership among institutions, especially those based in the U.S.

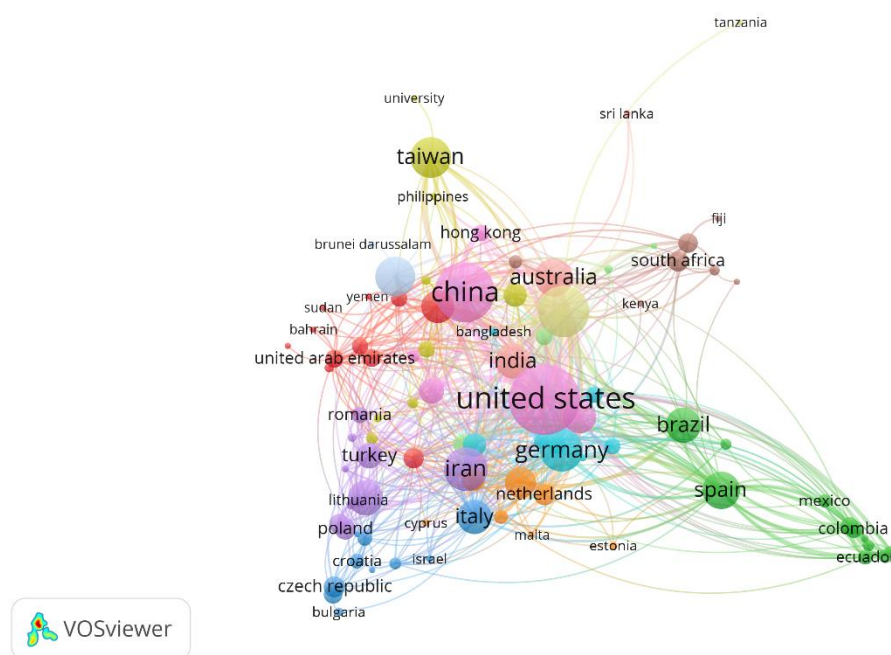


Figure 6. Country Visualization

Source: Data Analysis Result, 2026

The illustration shown in Figure 6 reveals the pattern of global distribution and international collaboration in the research of Balanced Scorecard. The United States is the most dominant and central node as it reveals the highest level of contribution and collaboration of the United States with other countries. It is clearly visible that there are strong relations between the United States and countries such as China, Australia, Germany, Spain, Brazil, India, and Netherlands as the influence of international research network of the United States is high in the formation of Balanced Scorecard concepts.

There are also other regional clusters of collaboration that can be observed. The green cluster denotes the cooperation among countries like Spain, Brazil, Mexico, Colombia, and Ecuador, denoting an extensive research network for Balanced Scorecard research in Europe and Latin America. The red and purple clusters show the collaboration among countries in Asia, Middle East, and Europe like China, Taiwan, India, Turkey, Iran, and Romania, denoting the adaptation of Balanced Scorecard research in different socio-economic and institutional

settings. On the other hand, South Africa, Kenya, Fiji, Tanzania, and Sri Lanka are shown as small nodes.

4. CONCLUSION

The results of the bibliometric analysis conducted on the basis of scientific papers dedicated to the topic give an idea of the evolution of the field under research, including the development of ideas, trends and patterns of international cooperation in the area. It can be concluded that the theory and practice of Balanced Scorecard has undergone a change of roles, transforming into the strategic management tool that combines the concepts of organizational performance, strategic management, sustainability, information management and decision-making process. In terms of citation analysis, it is clear that the fundamental papers of Kaplan and Norton, as well as studies related to the stakeholder theory, sustainability management and strategic performance measurement, have played an important part in shaping up the theoretical background of the field. The keyword analysis shows the shift from performance

measurement, key performance indicators and evaluation system to sustainable

development, environmental management and strategic alignment topics.

REFERENCES

- [1] D. P. Norton and R. S. Kaplan, "Balanced Scorecard," *The Palgrave Encyclopedia of Strategic Management*. Springer Science+Business Media, The Palladium Group, Lincoln, OR, United States, pp. 80–84, 2018. doi: 10.1057/978-1-137-00772-8_683.
- [2] A. Parida, U. Kumar, D. Galar, and C. Stenström, "Performance measurement and management for maintenance: A literature review," *J. Qual. Maint. Eng.*, vol. 21, no. 1, pp. 2–33, 2015, doi: 10.1108/JQME-10-2013-0067.
- [3] M. J. Epstein and P. S. Wisner, "Using a Balanced Scorecard to Implement Sustainability," *Environ. Qual. Manag.*, vol. 11, no. 2, pp. 1–10, 2001, doi: 10.1002/tqem.1300.
- [4] A. V Bentes, J. Carneiro, J. F. da Silva, and H. Kimura, "Multidimensional assessment of organizational performance: Integrating BSC and AHP," *J. Bus. Res.*, vol. 65, no. 12, pp. 1790–1799, 2012, doi: 10.1016/j.jbusres.2011.10.039.
- [5] H. Harlow, "The effect of tacit knowledge on firm performance," *J. Knowl. Manag.*, vol. 12, no. 1, pp. 148–163, 2008, doi: 10.1108/13673270810852458.
- [6] F. Figge, T. Hahn, S. Schaltegger, and M. Wagner, "The sustainability balanced scorecard - Linking sustainability management to business strategy," *Bus. Strateg. Environ.*, vol. 11, no. 5, pp. 269–284, 2002, doi: 10.1002/bse.339.
- [7] T. L. Moe, F. Gehbauer, S. Senitz, and M. Mueller, "Balanced scorecard for natural disaster management projects," *Disaster Prev. Manag. An Int. J.*, vol. 16, no. 5, pp. 785–806, 2007, doi: 10.1108/09653560710837073.
- [8] V. Decoene and W. Bruggeman, "Strategic alignment and middle-level managers' motivation in a balanced scorecard setting," *Int. J. Oper. Prod. Manag.*, vol. 26, no. 4, pp. 429–448, 2006, doi: 10.1108/01443570610650576.
- [9] F. De Geuser, S. Mooraj, and D. Oyon, "Does the balanced scorecard add value? Empirical evidence on its effect on performance," *Eur. Account. Rev.*, vol. 18, no. 1, pp. 93–122, 2009, doi: 10.1080/09638180802481698.
- [10] J. Kim, E. Suh, and H. Hwang, "A model for evaluating the effectiveness of crm using the balanced scorecard," *J. Interact. Mark.*, vol. 17, no. 2, pp. 5–19, 2003, doi: 10.1002/dir.10051.
- [11] A. Al-Ashaab, M. Flores, A. Doultsinou, and A. Magyar, "A balanced scorecard for measuring the impact of industry-university collaboration," in *Production Planning and Control*, Decision Engineering Centre, SAS, Cranfield University, United Kingdom, 2011, pp. 554–570. doi: 10.1080/09537287.2010.536626.
- [12] N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, "How to conduct a bibliometric analysis: An overview and guidelines," *J. Bus. Res.*, vol. 133, pp. 285–296, 2021.
- [13] M. C. Jensen, "Value maximization, stakeholder theory, and the corporate objective function," *Bus. Ethics Q.*, vol. 12, no. 2, pp. 235–256, 2002, doi: 10.5840/10.2307/3857812.
- [14] R. S. Kaplan and D. P. Norton, "Transforming the balanced scorecard from performance measurement to strategic management: Part II," *Account. Horizons*, vol. 15, no. 2, pp. 147–160, 2001, doi: 10.2308/acch.2001.15.2.147.
- [15] R. S. Kaplan and D. P. Norton, "Having trouble with your strategy? Then map it," *Harv. Bus. Rev.*, vol. 78, no. 5, pp. 167–176, 2000, [Online]. Available: <https://www.scopus.com/pages/publications/003426555?origin=resultslist>
- [16] H. Nørreklit, "The balance on the balanced scorecard - A critical analysis of some of its assumptions," *Manag. Account. Res.*, vol. 11, no. 1, pp. 65–88, 2000, doi: 10.1006/mare.1999.0121.
- [17] C. D. Ittner, D. F. Larcker, and T. Randall, "Performance implications of strategic performance measurement in financial services firms," *Accounting, Organ. Soc.*, vol. 28, no. 7–8, pp. 715–741, 2003, doi: 10.1016/S0361-3682(03)00033-3.
- [18] G. Hubbard, "Measuring organizational performance: Beyond the triple bottom line," *Bus. Strateg. Environ.*, vol. 18, no. 3, pp. 177–191, 2009, doi: 10.1002/bse.564.
- [19] M. Jensen, "Value maximisation, stakeholder theory, and the corporate objective function," *Eur. Financ. Manag.*, vol. 7, no. 3, pp. 297–317, 2001, doi: 10.1111/1468-036X.00158.
- [20] R. S. Kaplan and D. P. Norton, "Measuring the Strategic Readiness of Intangible Assets," *Harv. Bus. Rev.*, vol. 82, no. 2, pp. 52–63+121, 2004, [Online]. Available: <https://www.scopus.com/pages/publications/1542350788?origin=resultslist>

- [21] R. H. Chenhall, "Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: An exploratory study," *Accounting, Organ. Soc.*, vol. 30, no. 5, pp. 395–422, 2005, doi: 10.1016/j.aos.2004.08.001.
- [22] H. Norreklit, M. Jacobsen, and F. Mitchell, "Pitfalls in using the balanced scorecard," *J. Corp. Account. Financ.*, vol. 19, no. 6, pp. 65–68, 2008, doi: 10.1002/jcaf.20436.
- [23] C. D. Ittner, D. F. Larcker, and M. W. Meyer, "Subjectivity and the weighting of performance measures: Evidence from a balanced scorecard," *Account. Rev.*, vol. 78, no. 3, pp. 725–758, 2003, doi: 10.2308/accr.2003.78.3.725.
- [24] R. H. Chenhall, "Accounting for the Horizontal Organization," *Handbooks Manag. Account. Res.*, vol. 3, pp. 1207–1233, 2009, doi: 10.1016/S1751-3243(07)03001-5.