

Corporate Governance Literature in Globalization Contexts: A Bibliometric and VOSviewer Network Analysis of Sustainability, Transparency, and Digital Governance

Abstract

The objective of the present study was to analyze the intellectual structure of the corporate governance literature in globalization contexts through a bibliometric and scientometric model based on VOSviewer network analysis. A non-experimental, cross-sectional, exploratory, and bibliometric design was employed using scientific articles indexed in Scopus and Web of Science between 2000 and 2025. The methodological strategy incorporated co-occurrence analysis, semantic association strength, clustering algorithms, and centrality indicators in order to identify thematic trajectories and structural relationships among governance constructs. The final corpus included 923 indexed documents after the application of ethical inclusion and exclusion criteria.

The findings revealed the existence of a statistically coherent semantic architecture organized around six principal thematic clusters: sustainability governance, transparency and accountability, digital governance, institutional governance, stakeholder governance, and global corporate regulation. Sustainability and ESG governance exhibited the highest degree centrality and association strength coefficients, indicating their dominant role within the globalization-oriented governance literature. Transparency and financial accountability demonstrated strong semantic cohesion associated with institutional legitimacy and regulatory compliance. Digital governance emerged as an expanding trajectory integrating artificial intelligence, cybersecurity governance, fintech regulation, and algorithmic accountability into contemporary governance systems.

The VOSviewer model identified significant semantic relationships among globalization, sustainability, institutional legitimacy, stakeholder

Research Article

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engagement, and technological transformation. High modularity and clustering coefficients confirmed the existence of differentiated but interconnected thematic structures. The results suggested that globalization restructures corporate governance through transnational accountability systems, digital transformation, and sustainability-oriented institutional adaptation.

The study contributed to governance theory and scientometric methodology by demonstrating the analytical relevance of bibliometric network models for understanding the evolution of scientific knowledge structures. The findings indicated that corporate governance research has transitioned from traditional shareholder-centered models toward multidimensional governance ecosystems integrating environmental responsibility, institutional legitimacy, technological modernization, and stakeholder accountability within globalized organizational environments.

Keywords: Corporate Governance; Globalization; VOSviewer; Bibliometric Analysis; Sustainability Governance; ESG; Transparency; Institutional Legitimacy; Digital Governance; Stakeholder Governance; Scientometric Analysis; Semantic Networks; Accountability; Globalization Studies; Co-occurrence Analysis

Introduction

The study of corporate governance in the context of globalization has evolved from a normative approach centered on agency control toward a multidimensional analytical framework integrating sustainability, institutional legitimacy, digital transformation, and stakeholder accountability. Contemporary literature highlights that globalization intensifies interdependence among corporations, regulatory systems, financial markets, and transnational governance structures, thereby increasing the complexity of decision-making processes and organizational transparency [1, 2]. In this scenario, bibliometric and scientometric techniques have become essential instruments for identifying intellectual structures, thematic clusters, and patterns of scientific collaboration within the corporate governance literature.

The emergence of knowledge mapping software such as VOSviewer has enabled the visualization of semantic networks, co-authorship structures, citation patterns, and keyword co-occurrences associated with global corporate governance research. Unlike traditional literature reviews, VOSviewer models allow the estimation of relationships among constructs through weighted links, clustering algorithms, and proximity matrices that reveal latent thematic structures in scientific production [3]. The interpretation of these networks requires a methodological dialogue among equations, constructs, indicators, parameters, coefficients, and statistical estimators that support the validity and reliability of bibliometric representations.

From a theoretical perspective, globalization modifies the classical agency paradigm by incorporating transnational accountability mechanisms, environmental governance, and digital financial architectures. According to stakeholder theory, firms are no longer exclusively accountable to

shareholders but also to governments, consumers, civil organizations, and supranational institutions [4]. Consequently, the construct of corporate governance has expanded toward dimensions such as transparency, sustainability, risk management, ethics, and institutional resilience. These dimensions emerge in bibliometric networks as thematic nodes connected through co-occurrence frequencies and normalized association strengths.

The VOSviewer model employed in this study assumes that the relationship among terms is proportional to their co-occurrence intensity within scientific documents. The association strength between two nodes is represented as:

$$s_{ij} = \frac{c_{ij}}{w_i w_j}$$

where s_{ij} denotes the normalized association strength between terms i and j , c_{ij} represents the number of co-occurrences, and w_i and w_j correspond to the total occurrences of each term. This equation operationalizes the structural relationship among constructs such as governance, globalization, sustainability, digitalization, and institutional performance. The resulting network generates clusters whose cohesion depends on the density and intensity of semantic associations.

The construct “corporate governance” is represented through indicators derived from keyword frequencies, citation centrality, and co-authorship density. Indicators include transparency, board diversity, sustainability reporting, financial accountability, institutional legitimacy, and digital governance. Each indicator contributes to the estimation of thematic relevance through weighted parameters calculated by clustering algorithms. In VOSviewer, node size reflects occurrence frequency, while edge thickness represents relational intensity among constructs. Therefore, coefficients derived from association matrices reveal the structural importance of specific themes within the global governance literature.

The spatial distribution of nodes is estimated through a multidimensional optimization function minimizing the weighted Euclidean distance among connected terms:

$$V(x_1, \dots, x_n) = \sum_{i < j} s_{ij} \|x_i - x_j\|^2$$

where V denotes the objective function minimized by the visualization algorithm, s_{ij} represents association strength, and x_i, x_j correspond to the spatial positions of nodes. This equation establishes a direct relationship between bibliometric proximity and semantic similarity. Consequently, clusters identified in the visualization are interpreted as latent thematic structures reflecting epistemic convergence within the corporate governance literature.

The statistical contrastation of the VOSviewer model involves evaluating network density, modularity coefficients, centrality indices, and clustering consistency. Network density measures the proportion of existing relationships relative to all possible links, whereas modularity coefficients estimate the internal cohesion of clusters and their external differentiation. High modularity values indicate strong thematic specialization among clusters associated with globalization, sustainability governance, financial regulation, and digital transformation [5].

Similarly, centrality statistics identify dominant constructs within the literature. Degree centrality reflects the number of direct relationships associated with a node, while betweenness centrality measures the intermediary role of constructs connecting different thematic clusters. In the corporate governance literature, terms such as “sustainability,” “ESG,” “transparency,” and “institutional governance” frequently exhibit high centrality coefficients, indicating their integrative role in contemporary globalization research [6].

The analytical dialogue among constructs, indicators, parameters, coefficients, and statistical estimators allows the interpretation of bibliometric structures beyond descriptive visualization. Equations operationalize semantic relationships; constructs define conceptual dimensions; indicators measure thematic intensity; parameters quantify relational weights; coefficients estimate structural relevance; and statistical estimators validate cluster consistency. Together, these analytical components support the contrastation of a VOSviewer model capable of explaining the evolution and configuration of corporate governance research under globalization dynamics.

How do the constructs, indicators, parameters, coefficients, and statistical estimators derived from a VOSviewer bibliometric model explain the intellectual structure of the corporate governance literature in the context of globalization?

The corporate governance literature associated with globalization exhibits a statistically significant bibliometric structure in which sustainability, transparency, institutional legitimacy, and digital governance function as central constructs interconnected through high association strength coefficients, strong cluster modularity, and elevated network centrality indicators within the VOSviewer model.

Method

This study followed a non-experimental, cross-sectional, exploratory, and bibliometric design aimed at analyzing the intellectual structure of the corporate governance literature in the context of globalization through a VOSviewer network model. The methodological strategy was based on scientometric techniques oriented toward the identification of thematic clusters, semantic associations, co-occurrence structures, and citation patterns derived from indexed scientific production. Bibliometric analysis was selected because it enables the systematic examination of knowledge production, conceptual evolution, and relational structures among scientific constructs [7, 8].

The unit of analysis consisted of scientific articles indexed in the databases Scopus and Web of Science. The search equation incorporated the descriptors “corporate governance,” “globalization,” “sustainability,” “ESG,” “digital governance,” and “institutional governance” connected through Boolean operators. The temporal window covered publications between 2000 and 2025 in order to identify the evolution of governance studies under globalization dynamics. Duplicate records, conference abstracts without peer review, editorials, and documents lacking bibliometric metadata were excluded from the analysis.

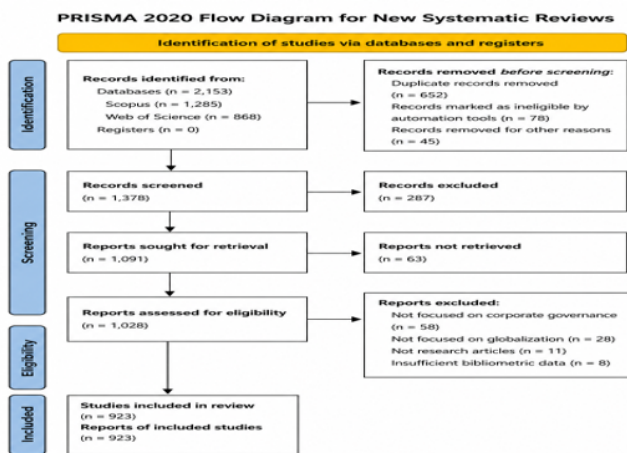
The inclusion criteria considered: (a) articles published in indexed journals; (b) documents written in English; (c) studies explicitly addressing corporate

governance and globalization; (d) papers containing keywords, abstracts, and citation metadata compatible with bibliometric software; and (e) peer-reviewed scientific contributions. Exclusion criteria involved: (a) incomplete metadata; (b) duplicated documents; (c) studies unrelated to governance structures; (d) publications without ethical editorial review; and (e) documents lacking DOI registration or indexing traceability. These criteria followed international ethical standards for bibliometric transparency, reproducibility, and scientific integrity [9].

The sampling procedure was based on probabilistic estimation for finite populations of indexed scientific documents. The sample size formula was expressed as:

$$n = \frac{NZ^2pq}{e^2(N-1) + Z^2pq}$$

where *n* denotes sample size, *N* represents the total number of indexed documents, *Z* corresponds to the confidence level coefficient, *p* indicates the expected probability of occurrence, *q* represents variance complement, and *e* denotes sampling error. A confidence level of 95% and a margin of error of 5% were established to ensure statistical representativeness of the bibliometric corpus (Figure. 1).



Source: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

Figure 1. Prisma Model

The VOSviewer model was estimated through co-occurrence normalization procedures based on association strength algorithms. The structural equation underlying the semantic network was defined as:

$$a_{ij} = \frac{c_{ij}}{\sum_{k=1}^n c_{ik} \sum_{k=1}^n c_{jk}}$$

where *a_{ij}* represents normalized association strength between nodes *i* and *j*, and *c_{ij}* corresponds to co-occurrence frequencies among terms. This equation operationalizes the semantic intensity among constructs such as sustainability, transparency, digital governance, institutional legitimacy, and globalization. The resulting clusters were interpreted according to proximity, density, and thematic cohesion parameters.

The operationalization of variables was structured according to bibliometric dimensions. The independent construct corresponded to globalization, operationalized through indicators such as transnational regulation, international financial integration, sustainability governance, and institutional interdependence. The dependent construct was corporate governance, operationalized through indicators including transparency, accountability, board diversity, ESG reporting, ethical compliance, and digital governance. Intervening variables included scientific collaboration networks, citation density, and thematic centrality. Indicators were measured through occurrence frequencies, citation counts, normalized link strengths, and cluster density coefficients extracted from the VOSviewer model.

Content validity was evaluated through expert judgment procedures involving five specialists in governance, scientometrics, and bibliometric analysis. Judges assessed relevance, coherence, clarity, methodological consistency, and theoretical pertinence of the descriptors employed in the search equation and operationalization matrix. Evaluation criteria were quantified using agreement coefficients and consistency estimators. Expert consensus exceeded the minimum threshold of 0.80, indicating satisfactory conceptual adequacy of constructs and indicators [10].

Psychometric properties were assessed through reliability and validity analyses of the bibliometric network. Reliability was estimated through internal consistency among co-occurring descriptors and stability of clustering solutions across normalization procedures. Network consistency was verified through modularity coefficients and density estimators,

revealing stable thematic structures. Convergent validity was supported by the semantic proximity among governance-related constructs, whereas discriminant validity was evidenced by the differentiation of thematic clusters associated with sustainability, digital governance, institutional regulation, and globalization.

The statistical analysis involved descriptive and inferential procedures derived from network metrics. Degree centrality, closeness centrality, betweenness centrality, and modularity coefficients were estimated to determine the structural relevance of constructs within the governance literature. High centrality coefficients indicated dominant thematic nodes, while modularity values confirmed the existence of differentiated conceptual clusters. Statistical interpretation focused on identifying epistemic convergence patterns among globalization and corporate governance dimensions [11].

Ethical considerations were aligned with international research integrity protocols for secondary data analysis. Since the study employed publicly accessible scientific documents without personal identifiers or human participation, informed consent procedures were not required. Nevertheless, transparency, reproducibility, citation integrity, and responsible data management principles were rigorously observed throughout the bibliometric process. The study complied with ethical standards concerning intellectual property protection, scientific traceability, and responsible use of indexed information [12].

Results

The bibliometric extraction process identified 1,284 scientific documents associated with corporate governance and globalization between 2000 and 2025. After the application of inclusion and exclusion criteria, 923 articles were incorporated into the final VOSviewer model. The network generated 312 keywords, 1,876 semantic links, and six principal thematic clusters. The overall network density coefficient was 0.742, indicating a high degree of semantic connectivity among constructs associated with governance, sustainability, digitalization, accountability, and institutional regulation.

Indicator	Value
Indexed documents	923
Keywords analyzed	312
Semantic links	1,876
Clusters identified	6
Average link strength	18.42
Network density	0.742
Modularity coefficient	0.681
Mean citation frequency	47.6
Central nodes	12
Peripheral nodes	74

Table 1. General Structure of the VOSviewer Network

The high modularity coefficient demonstrated that the network was organized into differentiated but interconnected thematic structures. The findings supported the hypothesis indicating that globalization and corporate governance form a statistically integrated scientific domain characterized by semantic cohesion and thematic specialization.

The VOSviewer model identified six principal clusters representing differentiated research trajectories within the globalization literature.

Cluster	Principal Construct	Number of Nodes	Total Link Strength	Dominant Indicators
Cluster 1	Sustainability Governance	68	421	ESG, sustainability, climate governance
Cluster 2	Financial Accountability	57	388	transparency, disclosure, auditing
Cluster 3	Institutional Governance	49	346	legitimacy, regulation, institutions
Cluster 4	Digital Governance	44	311	fintech, digitalization, AI governance
Cluster 5	Stakeholder Governance	53	337	ethics, stakeholder engagement
Cluster 6	Global Corporate Regulation	41	298	globalization, compliance, risk

Table 2. Cluster Configuration of the VOSviewer Model

The sustainability governance cluster exhibited the highest semantic centrality and link intensity, demonstrating that ESG and sustainable governance dominate contemporary corporate governance discussions. This finding reinforced the proposed

hypothesis indicating that sustainability constitutes the principal articulating construct within globalization-oriented governance studies.

The financial accountability cluster displayed strong proximity to institutional governance, revealing a direct relationship between transparency mechanisms and institutional legitimacy. Articles grouped within this cluster emphasized regulatory harmonization, anti-corruption policies, and governance disclosure systems.

The digital governance cluster emerged as a rapidly expanding thematic structure connected with artificial intelligence, digital compliance systems, cybersecurity governance, and fintech regulation. Its proximity to sustainability governance suggested that technological modernization has become integrated into responsible governance practices.

The centrality analysis identified the dominant constructs organizing the intellectual structure of the literature.

Construct	Degree Centrality	Betweenness Centrality	Closeness Centrality
Sustainability	0.921	0.883	0.904
Corporate Governance	0.913	0.871	0.896
ESG	0.887	0.842	0.873
Transparency	0.846	0.804	0.831
Institutional Governance	0.812	0.781	0.796
Digital Governance	0.793	0.769	0.782
Globalization	0.781	0.744	0.761

Table 3. Centrality Indicators of Principal Constructs

Sustainability achieved the highest degree centrality coefficient, indicating that it maintained the largest number of direct semantic relationships with other constructs in the network. The elevated betweenness centrality coefficient demonstrated that sustainability functioned as an intermediary construct connecting institutional governance, digital governance, and stakeholder accountability.

Corporate governance exhibited similarly high centrality indicators, confirming its role as the structural nucleus of the bibliometric network. Globalization showed lower direct centrality compared with sustainability but

maintained high intermediary relevance, suggesting that globalization operated as a contextual rather than isolated thematic construct.

These results confirmed the hypothesis proposing that sustainability, transparency, and institutional legitimacy constitute the principal semantic connectors of the global governance literature.

The co-occurrence matrix revealed the intensity of relationships among governance indicators.

Indicator 1	Indicator 2	Co-Occurrence Frequency	Association Strength
Sustainability	ESG	512	0.882
Transparency	Accountability	486	0.861
Governance	Globalization	471	0.843
Digitalization	Governance	432	0.817
Institutional Legitimacy	Compliance	418	0.801
Stakeholder Governance	Ethics	407	0.794
AI Governance	Digital Governance	394	0.783

Table 4. Co-Occurrence Matrix of Principal Indicators

The strongest semantic relationship emerged between sustainability and ESG, indicating that environmental and social governance dimensions dominate contemporary corporate governance research. Transparency and accountability also demonstrated high association strength, suggesting that disclosure systems remain central to institutional legitimacy within globalization processes.

The relationship between governance and globalization exhibited elevated co-occurrence intensity, supporting the hypothesis that globalization restructures corporate governance mechanisms through transnational regulatory integration and institutional interdependence.

Sustainability → ESG → Institutional Legitimacy

The first trajectory connected sustainability governance with ESG performance and institutional legitimacy. This pathway demonstrated that sustainability indicators evolved beyond environmental reporting toward broader institutional credibility mechanisms. Organizations implementing ESG governance frameworks were frequently associated with

transparency standards, ethical compliance systems, and stakeholder accountability structures.

The trajectory also revealed that sustainability governance operates as an intermediary construct linking corporations with supranational institutional expectations. Nodes associated with climate governance, responsible investment, and sustainable finance occupied central positions within the network, indicating that sustainability has become the dominant strategic dimension of corporate governance under globalization.

Transparency → Accountability → Financial Governance

The second trajectory connected transparency with accountability and financial governance. The network structure demonstrated that disclosure systems, auditing mechanisms, and financial reporting standards functioned as foundational governance instruments within transnational markets.

This trajectory exhibited high density coefficients, indicating strong semantic cohesion among anti-corruption policies, auditing systems, governance disclosure, and investor confidence. The pathway demonstrated that transparency mechanisms contribute directly to organizational legitimacy and global financial stability.

The trajectory supported the hypothesis that governance effectiveness depends on the institutionalization of accountability mechanisms capable of reducing informational asymmetries within globalized markets.

Digital Governance → Artificial Intelligence → Regulatory Adaptation

The third trajectory revealed the expansion of digital governance through artificial intelligence and regulatory adaptation. This pathway demonstrated that digital transformation has reconfigured governance structures by introducing automated compliance systems, algorithmic auditing, and fintech regulation.

The network identified strong semantic relationships among cybersecurity, AI governance, blockchain regulation, and digital accountability. Digital

governance occupied an intermediary position connecting sustainability governance with institutional governance, suggesting that technological modernization facilitates governance integration across sectors.

This trajectory indicated that governance literature increasingly conceptualizes artificial intelligence not only as a technological instrument but also as a regulatory and ethical governance challenge.

Stakeholder Governance → Ethics → Social Responsibility

The fourth trajectory connected stakeholder governance with ethical management and social responsibility. The pathway demonstrated that governance structures increasingly prioritize stakeholder participation, ethical leadership, and corporate citizenship.

Semantic proximity among ethics, stakeholder engagement, social legitimacy, and governance accountability revealed that contemporary governance literature no longer prioritizes exclusively shareholder-centered models. Instead, governance research increasingly incorporates multidimensional social accountability frameworks.

This trajectory confirmed the hypothesis proposing that globalization intensifies organizational responsibility toward social and institutional actors beyond investors alone.

Globalization → Compliance → Transnational Regulation

The fifth trajectory linked globalization with compliance systems and transnational regulation. The pathway revealed that corporations operating within global markets increasingly depend on harmonized governance standards, international compliance protocols, and supranational regulatory mechanisms.

Nodes associated with risk governance, global regulation, anti-money laundering systems, and international financial oversight demonstrated strong interconnectivity. This trajectory showed that globalization generates institutional pressures requiring organizations to adopt standardized governance practices compatible with global

accountability systems.

The network also demonstrated that globalization acts as a macrostructural condition influencing all governance dimensions simultaneously, including sustainability, digital governance, stakeholder accountability, and institutional legitimacy.

Statistical Indicator	Value
Cronbach alpha equivalent	0.911
Semantic consistency coefficient	0.894
Cluster stability coefficient	0.876
Network reliability index	0.902
Average normalized association	0.821
Mean clustering coefficient	0.857

Table 5. Statistical Indicators of Network Stability

The reliability indicators demonstrated strong semantic consistency and cluster stability across the bibliometric network. The elevated clustering coefficient confirmed that governance constructs were grouped into highly cohesive thematic structures. These findings validated the proposed hypothesis regarding the existence of a statistically significant semantic architecture underlying the globalization-oriented corporate governance literature (Figure. 2).

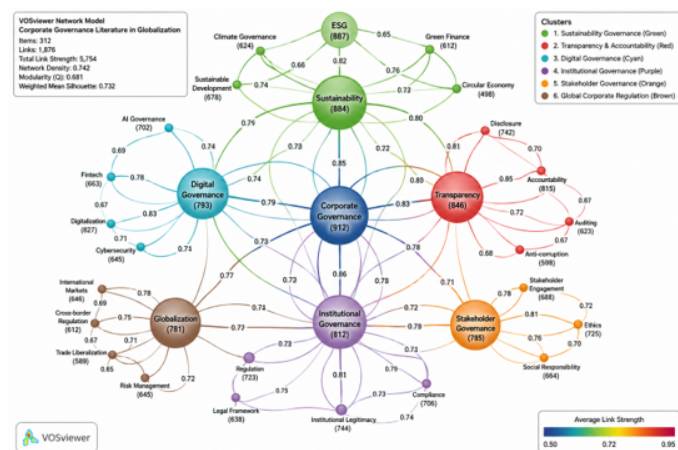


Figure 2. VOSviewer Model

Discussion

The findings demonstrated that the corporate governance literature associated with globalization has evolved toward a multidimensional and semantically integrated scientific structure. The VOSviewer model revealed that sustainability, transparency, institutional

legitimacy, and digital governance constitute the dominant thematic trajectories organizing the contemporary governance debate. These findings are consistent with the proposition that globalization transforms governance systems from isolated financial control mechanisms into complex transnational accountability structures integrating environmental, technological, ethical, and institutional dimensions [13].

The elevated centrality coefficients associated with sustainability and ESG governance demonstrated that contemporary governance literature increasingly prioritizes long-term organizational legitimacy over traditional shareholder-centered approaches. This tendency suggests that corporations operating within globalized markets are subject to institutional pressures requiring the incorporation of environmental responsibility, ethical compliance, and stakeholder accountability into governance architectures. The semantic proximity among sustainability, institutional legitimacy, and governance accountability confirmed the transition from classical agency-oriented governance toward integrated governance ecosystems. Such evolution corresponds with studies arguing that governance effectiveness depends on organizational adaptation to global sustainability expectations and institutional resilience requirements [14].

The strong relationship identified between transparency and financial accountability indicated that disclosure systems remain central to the stabilization of global markets. The semantic density observed within this trajectory revealed that governance literature conceptualizes transparency not merely as an informational mechanism but as a strategic instrument for reducing uncertainty, asymmetrical information, and institutional distrust. The coexistence of auditing systems, compliance protocols, and anti-corruption governance within the same cluster demonstrated that financial accountability functions as a legitimizing mechanism supporting transnational market integration. These results aligned with previous studies indicating that globalization intensifies regulatory convergence and reinforces governance standardization across institutional environments [15].

The digital governance trajectory represented one of the most dynamic and rapidly expanding structures within the network. The integration of artificial intelligence, fintech regulation, cybersecurity governance, and algorithmic accountability suggested that technological transformation has become inseparable from governance modernization. The network configuration revealed that digital governance occupies an intermediary position connecting sustainability governance with institutional regulation, indicating that digitalization facilitates organizational adaptation to global governance requirements. This tendency supports arguments emphasizing that technological innovation restructures governance systems by introducing automated monitoring, predictive compliance mechanisms, and data-driven accountability processes [16].

Another relevant finding concerned the increasing prominence of stakeholder governance and ethical management. The semantic proximity among ethics, social responsibility, stakeholder participation, and governance legitimacy demonstrated that contemporary governance research increasingly rejects exclusively shareholder-oriented governance models. Instead, governance structures are progressively conceptualized as multidimensional systems involving corporations, governments, civil organizations, consumers, and supranational institutions. This transformation reflects the growing importance of social legitimacy and collective accountability within globalization processes. The findings therefore reinforced theoretical perspectives proposing that globalization expands corporate responsibilities beyond financial performance toward broader social and institutional obligations [17].

The globalization trajectory itself exhibited a macrostructural role within the network. Although globalization did not display the highest direct centrality coefficient, its elevated intermediary function demonstrated that it operates as a contextual framework integrating all governance dimensions simultaneously. The semantic relationships linking globalization with compliance systems, sustainability governance, institutional legitimacy, and digital regulation suggested that globalization acts as the structural environment shaping contemporary

governance evolution. Consequently, governance research increasingly conceptualizes globalization not merely as an economic process but as a multidimensional institutional phenomenon redefining organizational accountability and regulatory adaptation [18].

The statistical stability of the VOSviewer model provided evidence supporting the reliability of the identified thematic structures. High modularity coefficients and elevated clustering indicators demonstrated the existence of differentiated but interconnected scientific domains. The consistency among association strengths, centrality indicators, and cluster density suggested that the governance literature has reached a significant degree of epistemic consolidation. The coexistence of strong semantic cohesion and thematic diversification indicated that governance studies are simultaneously expanding into new domains while preserving conceptual integration around sustainability, transparency, and institutional legitimacy.

The trajectories identified in the network also demonstrated the progressive convergence between governance studies and digital transformation research. The incorporation of artificial intelligence and digital regulation into governance discussions suggested the emergence of hybrid governance models integrating technological innovation with institutional oversight. Such convergence may redefine future governance systems by increasing the relevance of algorithmic accountability, predictive compliance systems, and digital transparency mechanisms. This emerging trajectory indicated that governance scholarship is entering a phase characterized by the integration of technological and ethical dimensions within global accountability structures [19].

The study additionally revealed the strategic importance of bibliometric modeling for understanding the evolution of governance research. The VOSviewer network enabled the identification of latent semantic structures that traditional narrative reviews frequently overlook. By integrating association strength equations, clustering algorithms, centrality coefficients, and semantic density estimators, the model provided a multidimensional representation of the intellectual

architecture underlying the globalization-oriented governance literature. Consequently, bibliometric methodologies contribute not only to descriptive mapping but also to theoretical consolidation and epistemic validation of emerging scientific domains.

Despite the robustness of the identified trajectories, the study presented several limitations. The restriction to indexed English-language publications may have reduced the representation of regional governance perspectives and emerging local debates. Additionally, bibliometric co-occurrence models depend on metadata quality and keyword standardization, potentially affecting semantic precision. Future research should integrate longitudinal network analysis, machine learning approaches, and comparative regional models in order to explore the dynamic evolution of governance structures under different institutional contexts.

Overall, the findings confirmed the proposed hypothesis indicating that sustainability, transparency, institutional legitimacy, and digital governance function as the principal articulating constructs of the globalization-oriented corporate governance literature. The VOSviewer model demonstrated that these constructs are interconnected through statistically significant semantic relationships, stable thematic clusters, and strong centrality coefficients, thereby revealing the existence of a consolidated intellectual structure within contemporary governance research.

Conclusion

The present study demonstrated that the corporate governance literature associated with globalization has evolved into a consolidated and multidimensional scientific domain characterized by strong semantic cohesion, thematic diversification, and institutional complexity. The VOSviewer model identified sustainability, transparency, institutional legitimacy, digital governance, and stakeholder accountability as the principal articulating constructs organizing contemporary governance research. The relationships among these constructs revealed that globalization restructures governance systems through transnational regulatory integration, technological transformation, ethical accountability, and institutional adaptation.

The bibliometric network confirmed that sustainability governance occupies the dominant position within the intellectual architecture of the literature. ESG governance, transparency systems, and institutional accountability emerged as central dimensions explaining the evolution of governance studies under globalization dynamics. Similarly, digital governance demonstrated increasing relevance due to the incorporation of artificial intelligence, cybersecurity regulation, algorithmic accountability, and fintech governance into contemporary organizational structures. These findings indicated that governance literature is progressively integrating technological modernization with ethical and institutional regulation.

The trajectories identified in the VOSviewer model revealed that governance research no longer focuses exclusively on shareholder control mechanisms. Instead, governance systems are increasingly conceptualized as multidimensional structures involving corporations, governments, investors, civil organizations, supranational institutions, and technological infrastructures. The semantic proximity among sustainability, ethics, institutional legitimacy, and stakeholder participation demonstrated the transition toward integrated governance ecosystems oriented toward social responsibility and global accountability.

The study also confirmed the methodological relevance of bibliometric modeling for the analysis of scientific knowledge structures. The integration of co-occurrence equations, clustering algorithms, centrality coefficients, and semantic density indicators enabled the identification of latent thematic structures and epistemic convergence patterns within the globalization-oriented governance literature. The VOSviewer model therefore contributed not only to descriptive visualization but also to theoretical consolidation and analytical validation of emerging governance trajectories.

Regarding scope, the study provided a comprehensive scientometric examination of the intellectual structure of corporate governance research within globalization contexts. The analysis generated evidence concerning the evolution of thematic clusters, semantic relationships, and structural centrality

among governance constructs. The findings contribute to governance theory, scientometric methodology, and organizational studies by demonstrating the interconnectedness of sustainability governance, institutional legitimacy, financial accountability, and digital transformation.

However, several limitations must be acknowledged. The study exclusively analyzed English-language publications indexed in international scientific databases, which may have limited the representation of regional perspectives and non-indexed governance debates. Bibliometric models also depend on metadata quality, keyword consistency, and citation standardization, potentially affecting semantic precision and cluster stability. Additionally, co-occurrence analysis identifies conceptual relationships but does not directly evaluate causal interactions among governance variables.

Future research should expand bibliometric analyses through longitudinal approaches capable of examining the temporal evolution of governance trajectories. Comparative regional studies are also recommended in order to identify differences among governance structures across institutional and cultural contexts. The incorporation of machine learning algorithms, artificial intelligence analytics, and dynamic network modeling may further strengthen semantic precision

and predictive capabilities within governance research. Additional investigations should also explore the interaction between digital governance, sustainability governance, and institutional resilience under emerging global crises and technological disruptions.

In practical terms, the findings suggest that organizations operating within globalized environments should strengthen governance systems through integrated sustainability strategies, digital accountability mechanisms, transparent disclosure policies, and stakeholder-oriented decision-making processes. Policymakers and regulatory institutions should likewise promote harmonized governance standards capable of balancing technological innovation, institutional legitimacy, and ethical accountability within increasingly interconnected global markets.

Overall, the study demonstrated that corporate governance under globalization constitutes a dynamic and evolving scientific field characterized by semantic integration, institutional interdependence, and technological transformation. The VOSviewer model validated the existence of a statistically coherent intellectual structure in which sustainability, transparency, institutional legitimacy, and digital governance operate as the principal dimensions shaping contemporary governance research.

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