Governance and Sustainability: Bibliometric Analysis of Change Factors for Planning in Higher Education Institutions (HEIs).

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ABSTRACT

The purpose of this paper is to analyze the articulation between the concepts of governance and sustainability of Higher Education Institutions (HEIs). Recent research has found that the relationship between governance and sustainability has gained relevance among the academic community. This is partially explained by the question: How does governance and sustainability affect HEIs planning? Therefore, the paper focuses on examining different theoretical lenses from institutionalism to stakeholder theory in order to propose a model of integration. The integration underpins the triad of strategy, structure and culture. Although, there are different positions on the role of governance in the scenario of HEIs, most of those posit it as a fundamental factor of change and survival. Overall, the proposed model aims to articulate elements such as stakeholders, accountability and sustainable objectives as part of the planning process.

KEY WORDS: Sustainability, governance, higher education, change factors, prospective

I. INTRODUCTION

The purpose of this paper is answering: How does governance and sustainability affect HEIs' planning? This question arises from the need to characterize governance in HEIs' planning, to manage it and contribute to sustainability (Leal Filho et al., 2021). According to Ramírez & Tejada (2018) HEIs' governance is understood as the way in which universities make decisions, distribute authority, create consensus, resolve conflicts, and obtain legitimacy through their objectives and mission. This topic has gained increasing attention among scholars organizations need to strengthen their governance systems as well as developing strategic tools, enhance decision-making processes which

(Biondi & Russo, 2022). Additionally, Adams et al. (2018) assert that sustainable development in HEIs requires organizational transformation and, consequently, deep, and systemic learning. In this line, Niedlich et al. (2019) state that if universities do not incorporate sustainability into their academic and administrative processes, minimum changes will happen in their governance structures.

In the Colombian context, governance constitutes the structure of the State University System, in accordance with the current regulatory framework (Garzón & Rodríguez, 2019). Álvarez & Duque (2018) state that HEIs are required to make a deep reflection on governance and their responsibility regarding economic, social, and environmental

issues. Interestingly, Morales & Prieto (2016) argue that Colombian HEIs need to appropriate holistically the concept of governance to develop academic and administrative processes that can optimize the quality of the educational service.

However, recent research suggests that our knowledge of the transformation of governance structures in HEIs (Hüther & Krücken, 2019), as well as the external factors that affect university governance (Bleiklie, Enders, Lepori, Rasmussen (2019) is limited. Moreover, Nabaho (2019) states the relevance of investigating the contribution of higher education policy discourse in proposing a reform of the shared governance architecture for formal universities. Similarly, Frølich, Christensen, & Stensaker (2019) discuss the relevance of determining the existence of real autonomy in HEIs to better specify governance factors.

In order to advance research on the topic, Facchini & Fia (2019) suggest looking at different research

trajectories to address the plurality of governance in HEIs. While, Gohari, Medalen, & Aranya (2019) argue that empirical studies are needed to explore how governance networks and institutional conditions of universities in specific contexts can foster or constrain the integration of academic activities in social development.

In this context, the aim of this paper is to propose conceptual guidelines to understand how governance and sustainability converge in the planning process of HEIs. According to Pedraja & Rodriguez, (2022) governance, and therefore university sustainability, is a complex and multifaceted phenomenon which includes a variety of institutional aspects and still in the process of consolidation. Figure 1 illustrates the articulation between governance, sustainability, and planning. The figure suggests that, although different conceptual positions exist, all of them contribute to support HEIs' efforts in including sustainable development as part of their long-term strategies (Leal Filho et al., 2021).

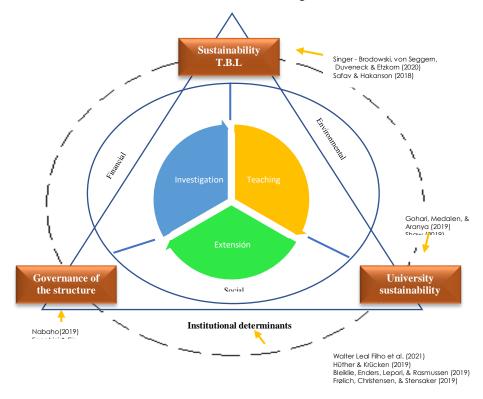


Figure 1. Synthesis of theoretical knowledge about HEIs' governance.

Source: own elaboration. Adapted from Doctoral Proposal (Mejía, 2022)

2. METHODS

The literature review followed the strategy of "citation pearl growing" (Shute & Smith, 1993) using indexed data in the Web of Science (WoS) and Scopus databases for the period from 1984 to June 2021. This analysis aimed to develop a better

understanding of the current state discussion on the articulation between governance and sustainability in HEIs, as a starting point for institutional planning.

Table 1 presents the search equation used in the bibliometric analysis.

Table 1. Search Equations

SEARCH EQUATION	DATABASE	DOCUMENTS FOUND
((sustainab*) AND (govern*) AND ((universit*) OR	SCOPUS WEB	3886
(colleg*) OR ("higher education institution")))	OF SCIENCE	1413

Source: Authors.

The search equation was used to obtain data on the author, title, source, and summary in the databases. Based on this information, we proceeded to perform a bibliometric analysis (mathematical and statistical method applied to books, articles, and other media), through the VOSviewer® software, version 1.6.6, to measure the number, performance and some structural

indicators that establish the connections between the publication, the author, and the research, in the area of study (Durieux & Gevenois, 2010). Figure 2 shows the networking knowledge map classified by analysis segment. The size of the nodes represents the frequency of occurrence of the terms, as well as the different relationships between them.

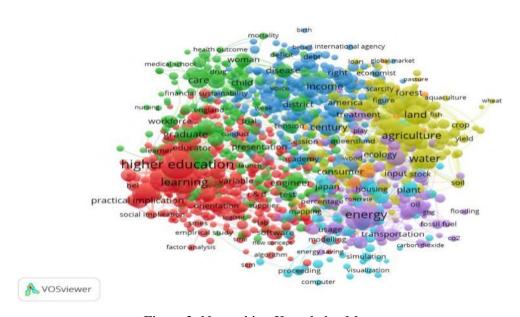


Figure 2. Networking Knowledge Map.

Source: Authors using VOSviewer® software, version 1.6.6

The map shows the variety of terms around the governance structure and sustainability of HEIs that need to be considered in the institutional planning process. The software used the full count method, extracting 1,335 concurrent terms from which seven clusters emerged. However, based on

the criteria of membership and relevance, four final clusters were identified. In Figure 3, the 1.0 model is proposed based on 4 clusters. These clusters present the relationship between the concepts of university sustainability, governance and planning.

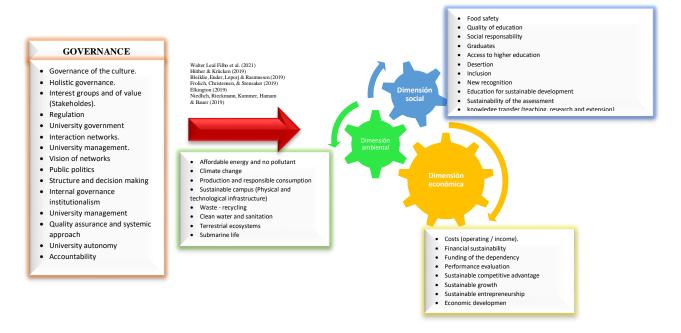


Figure 3. Conceptual Model 1.0

Source: Authors based on a Doctoral Proposal (Mejía, 2022).

Figure 4 illustrates the growing volume related to the development of the categories under study, where the period from 2017 to 2021 reveals a significant growth in the research production of HEIs' governance.

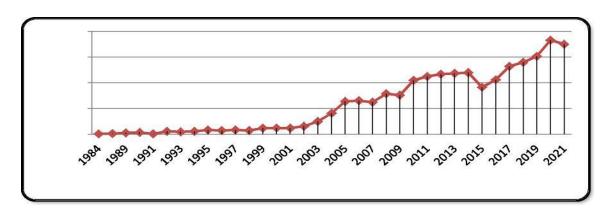


Figure 4. Number of annual publications on university sustainability since 1984.

Source: Authors.

Figure 5 presents the map of knowledge obtained for governance and sustainability in higher education, classified by year and appearance of the search terms in the selected databases. The period from 2010 to 2016 shows the highest number of articles related to the field of study.

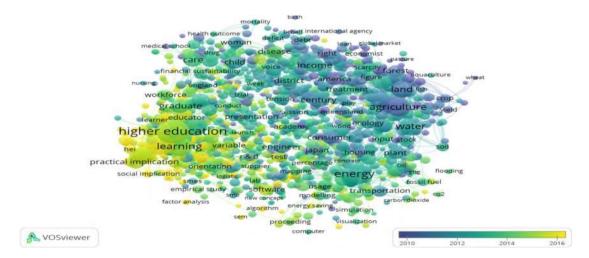


Figure 5. Overlay Visualization Map.

Source: Authors using VOSviewer® software, version 1.6.6

Figure 6 describes the results of the prism technique whose flow chart outlines the selection and data extraction criteria. The selection filter of the articles is starts based on the information in the title, followed by the information of the abstract and ending in the full text when the abstracts did

not contain relevant information (Moher et al., 2009). The flowchart depicts the number of studies screened, assessed for eligibility, and included in this review, with particular reasons for exclusions (Moher et al., 2009).

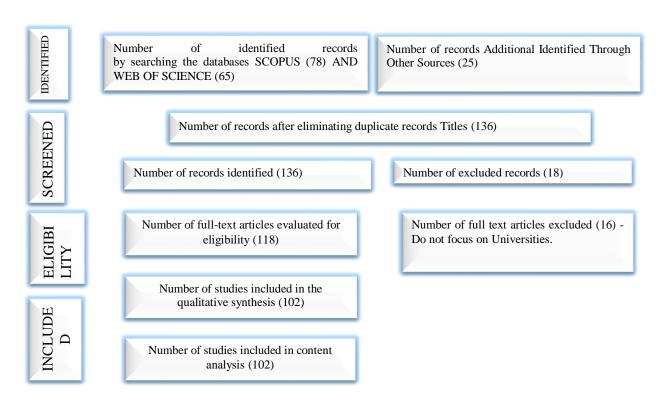


Figure 6. Systematic review flow prism technique.

Source: Authors adapted from (Moher, Liberati, Tetzlaff, & Altman, 2009).

3. ANALYSIS AND RESULTS

Leal Filho et al. (2021) posit that the concept of governance is related to democracy, participation, and sustainable development. Similarly, Oliveira & Resende Junior (2020) claim that organizational governance is related to strategic management, human talent, and accountability. In contrast, Marchisott et al. (2021) suggest that governance is a very broad topic, which generates some confusion as to what it really means, although they outline it as a dynamic interaction between government and management. The topic is meaningful as Zhai et al. (2020) argue governance can help to improve performance or in terms of Frølich et al. (2019) governance can build strategic capabilities. In the context of HEIs, Hernández-Diaz et al. (2021) assert that university's governance is based on academic administrative systems, integrated by missional functions and managerial components.

In terms of sustainability, Elkington (2019) points out that sustainable development is about meeting

present needs without compromising the ability to meet the needs of future generations. To do so, people need to be aware of three specific dimensions: economic, social, and environmental. In this line, Moon et al. (2018) state that HEIs are integrating the Sustainable Development Goals (SDGs) in the form of research, teaching, pedagogy and campus practices. However, Hernandez-Diaz, Polanco, & Escobar-Sierra (2020) suggest the need to develop an integrated model for measuring sustainability in public universities.

As a corollary, the need to analyze the impact of governance on sustainability in HEIs' planning is still valid and is articulated with (i) the interests of stakeholders. According to Wang et al. (2022) modern university management involves external stakeholders, which affects the overall purpose and decision making of the university; (ii) strategic management (Wang et al., 2022) and (iii) organizational culture (Bauer et al., 2020).

3.1. Theoretical References on Sustainability, Governance and Planning.

Drawing on the contributions of Maldonado et al., (2019) governance can be understood as the articulation of mechanisms of accountability, transparency, responsibility and control before stakeholders, in exchange for autonomy for the development of the mission with quality assurance. Our results, also show that the relationship between planning, governance and sustainability is explained through strategic management, institutional autonomy, and accountability systems.

In this line, current literature explains that involves long-term governance strategic objectives, goals to be achieved and the extent to which they are achieved (Biondi & Russo, 2022; Leal Filho et al. 2021). Significantly, goals and long-term objectives are mediated by sustainability indices and corporate social responsibility practices (Andreu et al., 2020). Unfortunately, Muhammad et al. (2022) conclude that public universities are passive in the adoption of new policies affecting governance structures. To amend this issue, Ramírez & Tejada (2018) point out that New Public Management must introduce into the official sector management techniques borrowed from private companies.

In contrast with other types of governance, institutional autonomy is recurrently found as a foundational element of HEI governance. This is partially explained by normative agreements that seek to regulate decision-making on how HEIs should be governed, organized and funded, without government interference (Yat et al., 2021). For Shin et al., (2022) university's autonomy is fundamental for optimal governance in the long run, while its practices should account for building a desirable structure.

Finally, there is the importance of the accountability system. Shin et al., (2022) explain that HEIs are accountable to stakeholders such as the government, students, and the labor markets in return for their autonomy. Forms of accountability can be found in types of auditing, annual reports, quality assurance mechanisms. other and Nevertheless, Huisman, (2020) argues that the notion of accountability is much more explicit in stakeholders' agendas. Additionally, it seems that the balance between accountability and autonomy is quite often unbalanced towards an over-emphasis on the accountability of HEIs' outcomes. Table 2 presents the most significant assumptions found in the literature in the line of governance, university sustainability and planning.

AUTHOR	PREMISE	
(Tang & Hussin, 2013)	Competitiveness in the higher education sector and continuous internal improvement are important elements for HEIs to be sustainable.	
(Hilman & Siam, 2014)	Organizational structure and organizational culture are significantly related to sustainability and governance of HEIs.	
(Lokuwaduge & Armstrong, 2015)	Stakeholder theory points out that internal members as stakeholders have intrinsic moral rights and duties on behalf of the institution and therefore seek to accommodate stakeholder rights in a supportive manner that leads to improved performance.	
(Brunner & Ganga, 2016)	System governance must respond to changes in the structure, functioning and organization of HEIs.	
(Marques, 2017)	Resources and capacities should be geared towards achieving the governance objectives of the organizing HEI.	

(Ramirez & Tejada, 2018)	Governance in public higher education is understood as the way universities make decisions, distribute authority, build consensus, resolve conflicts, and gain legitimacy through their goals and mission.
(Schmal & Cabrales, 2018)	University governance is oriented towards society and the solution of the serious public problems that afflict it requires a political, economic, and social model that distances itself from the dominant neo-liberalism.
(Huther & Krucken, 2019)	The governance perspective is particularly significant for interdisciplinary research on higher education. Here, regulatory structures and the knowledge gained from these structures must be analyzed to facilitate targeted intervention and change.
(Facchini & Fia, 2019)	Transforming the university governance of public HEIs by adapting corporate-like structures allows university operations to be managed in the light of their autonomy.
(Ganga- Contreras et al., 2019).	The challenges university governance face include new management techniques and methods.
(Mora Arenas, 2019)	The starting point for thinking about university governance today is not so much about the epistemological but about the ontological, in a commitment to the emergence of critical and supportive subjectivities.
(Maldonado et al., 2019)	The governance principles considered are autonomy, academic freedom, accountability, participation, and institutional representation. The results show that the control mechanisms implemented by the state influence the universities and shape differences in the models of governance exercised.
(Garzón & Rodríguez, 2019)	Governance is a necessary process that forms the backbone of a complex and functional system that needs to be in constant motion to address sustainability in HEIs.
(Pérez & Rodríguez, 2021)	The concept of strategic alignment is established as a principle of university governance.
(Leal Filho et al., 2021).	Governance in higher education refers to the systems and procedures under which organizations are directed and controlled.
(Shin et al., 2022a).	University autonomy is fundamental to good governance in the long term, while capacity building must be a priority to provide an optimal governance environment.
(Wang et al., 2022)	The university should be provided with full autonomy to ensure that it meets its objectives in line with its overall planning and development strategy.

Source: Own elaboration.

4. DISCUSSION

There is a growing concern to articulate university governance and sustainability. This articulation can occur in HEIs through the development of the Triple Bottom Line (TBL) (Elkington, 2019). From this stance, governance and sustainability, refer to the academic and administrative subsystem, where the performance of HEIs is managed (Hernández-Diaz et al., 2019).

Particularly for HEIs the process presents a new social contract with stakeholders to build the future from an improved present (Elkington, 2019; Leal Filho et al., 2021).

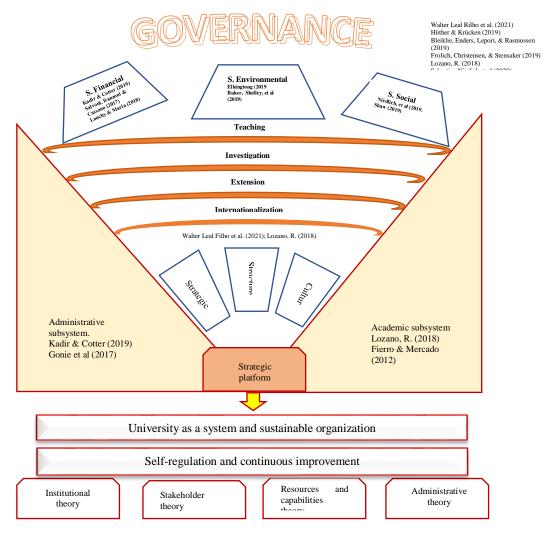
Our research has identified different theoretical lenses to understand the interaction between governance, sustainability and planning, which include references to institutionalism, stakeholders, resources and capacities. In terms of institutionalism, there is a strong connection between sustainability and governance throughout decision making processes and the evolution of institutions (DiMaggio & Powell, 1991; North, 1990; Scott, 2001).

In relation to the Theory of Resources and Capabilities, Fong, Flores, & Cordoza (2017) assert that the informed relation can explain the behavior and performance of an HEI inside a specific context. Moreover, literature tends to point out to the importance of decentralization, which will vary based on to the nature and mission of the institution (Shin et al., 2022), as well as the benefits for articulating sustainability concerns with current capabilities (Hernández-Diaz et al.,

2021). For HEIs, Hernandez-Diaz, Polanco, & Castaño, (2020) found that the universities' performance covered academic, research and extension aspects in the academic subsystem; while financial, human and infrastructure resources, internationalization and evaluation made up the administrative subsystem. This turns out as Dumitrescu, Costică, Simionescu, & Gherghina (2020) posit that public HEIs should consider financial self-management, planning and financial autonomy as crucial elements.

Finally, Stakeholder theory presents the perspective of several interested actors who can impact or be impacted by the process of achieving organizational goals (Oliveira & Resende Junior, 2020). In this sense, Suharto et al. (2022) conclude that HEIs face new expectations from their stakeholders in terms of increased accountability, quality assurance and professional management.

Figure 7 presents a proposed conceptual model 2.0, which is based on the theoretical guidelines of sustainability in the field of governance and institutional planning.



Walter Leal Filho et al. (2021); Rasche, Morsig & Moon (2017); Nabaho (2019)

Figure 7. Conceptual Model 2.0

Source: Authors based on a Doctoral Proposal (Mejía, 2022)

5. CONCLUSIONS

Institutional identity needs to be strengthened by energizing a participatory process that includes the different stakeholders involved in the development and management of the HEI. In conjunction with this, it is necessary to demonstrate a clear governance structure which can provide transparency while guarantees institutional stability through a system of rules, regulations and policies. Additionally, there is a significant need to energize institutional development, management and sustainability, demonstrating that managers are

focused on the efficient execution of substantive functions and financial sustainability.

During the articulation process, it is important to guarantee the scope of the academic structure and processes, with the purpose of privileging the articulation of curricular aspects in the line of academic excellence. This underlies the formative, pedagogical and interaction components, as well as the processes of creating academic programs.

Furthermore, the articulation, should account to contribute to research, innovation, technological development, and creation. HEIs should strive to generate a critical spirit, while transferring and promoting cultural development. At the same time, they must generate social impact, through the execution of a development plan that contains strategic axes to interact with the different value and interest groups.

Finally, it is necessary to insert HEIs in contexts beyond the academic that foster external relations of professors and students. This requires demonstrating the availability of resources and capacities for the different stakeholders to recognize and holistically feed back into pluricultural contexts. In this sense, it is possible to affirm that there is no research oriented towards models for measuring governance to establish its impact on university sustainability, an aspect that should be considered as a potential topic for future research.

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