

THE NEXUS BETWEEN CORPORATE GOVERNANCE MECHANISMS AND SUSTAINABILITY DISCLOSURE: A REVIEW OF THEORETICAL FRAMEWORKS AND EMPIRICAL FINDINGS

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ABSTRACT

This bibliometric analysis aims to provide a thorough historical picture of Corporate Social Responsibility and Disclosure (CSR/D) within the corporate world. For this purpose, we meticulously gathered and scrutinized a corpus of 496 articles that pertain to sustainability disclosures and CG, spanning the period from 1995 to 2021. During this research endeavor, we made use of 'biblioshiny,' an interactive online interface made possible by R-Bibliometric studio's 3.0 toolset, to carry out a thorough Bibliometric analysis and conceptual exploration. Our investigation has discerned the Corporate Social Responsibility and Environmental Management journal as the foremost journal in terms of source impact. Notably, the centerpiece journal article emerges as 'Corporate Governance and Corporate Social Responsibility Disclosures,' which prominently features the burgeoning economies as a recurrently cited focal point. Examining the lexical landscape, our study spotlights the recurrent usage of specific terms across various elements, including abstracts, author-assigned keywords, additional keywords, and titles. The prevalent terms encompass 'CG,' 'disclosures,' and 'sustainability.' Meanwhile, Indonesia emerges as the most prolific contributor in terms of publications in this domain. In our pursuit of classifying the interconnected literature streams and ascertaining the evolving trends within corporate governance literature, we judiciously employed a conceptual framework. To this end, a co-occurrence network was meticulously constructed, elucidating four primary study streams: CG, environmental reporting, sustainability, and corporate social responsibility disclosures. After thematic evaluation, we have developed a thematic map that is used for the understanding of the basic or transversal themes, emerging or declining themes, motor themes, and highly developed but isolated themes. These themes are used for future direction and highlighted the area that which have critical on the research areas. These thematic insights hold great potential for shaping future research directions and underscoring pivotal areas warranting profound investigation.

Keyword: corporate governance, Sustainability, CSR/D, Board independence, Bibliometric analysis, biblioshiny, conceptual structure.



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INTRODUCTION

The main objective of this study is to explore the interconnections between different facets of sustainability disclosure and various components of corporate governance (CG). In today's business landscape, there is an increasing call for companies to adopt sustainable business practices. Corporate sustainability and governance represent contemporary challenges in the business world, and they also constitute a dynamically evolving field of research (Aras & Crowther, 2008). Corporate social responsibility (CSR) represents a global, private-sector initiative with the overarching aim of exerting a positive influence on the world. This is achieved through incentives and charitable contributions extended to companies and their employees. Conversely, CG entails a systematic framework that delineates the rules, regulations, and processes governing the control and management of an organization (Li et al., 2023). This encompasses elements such as the gender diversity, and stakeholders, as elucidated by (Mubeen et al., 2024) and (Ali et al., 2024). Stakeholder engagement assumes paramount significance for any company, serving as a pivotal determinant of its credibility and exerting a profound impact on the organization's overall success, as underscored by (Pfeffer & Salancik, 1977).

Sustainability disclosure can be categorized into four distinct sets: strategic, economic, environmental, and public information. The disclosure of strategic and financial information holds significance for investors and shareholders who are keen on investing in a company (Mahmood et al., 2023). Conversely, environmental and social information disclosure is vital for engaging with stakeholders. Consequently, disclosures pertaining to governance variables assume a critical role for every company (H. M. Arslan et al., 2023), as emphasized by (Hillman et al., 2000). Corporate social responsibility disclosure entails the dissemination of internal information concerning a firm's actions and contributions to societal welfare and interests (Arslan et al., 2022). This encompasses the activities undertaken by firms for the betterment of society (Arslan et al., 2022). CG is of paramount importance in maintaining a delicate equilibrium between the individual social objectives of firms and their economic pursuits (Claessens, 2006). CSR disclosure plays a pivotal role in enhancing financial performance (Ramos-Meza et al., 2021), facilitating access to capital (Arslan & Bashir, 2021), reducing operational costs, increasing sales, boosting customer satisfaction and loyalty, and elevating product quality (Hackston & Milne, 1996). The CG framework and CSR are inherently interrelated, contributing positively to

the market value of organizations (Beltratti, 2005). CSR disclosure and CG are two sides of the same coin, compelling companies to exhibit their responsibilities and duties to all stakeholders, the effectiveness of good CG is intricately linked with CSR disclosure.

Much like other developing economies, Bangladesh has embraced a Western-style CG model characterized by increased board independence, the separation of CEO and chairman roles, and the establishment of oversight committees, among other features. In response to external pressures exerted by international aid agencies, many developing and emerging economies have adopted the Anglo-Saxon model to enhance the effectiveness of their CG mechanisms. However, the applicability and impact of this model on CG and CSR disclosure vary in different contexts, as exemplified by cases in India (Reed, 2002), South Africa (West, 2006), and South Korea (Siddiqui, 2010). In emerging economies like Bangladesh, the influence of the CG model on CSR disclosure outcomes diverges.

Diverse theoretical frameworks have been applied to research on CG and sustainability disclosure. Institutional theory posits that CG primarily serves the purpose of establishing legitimacy (Hamilton & Biggart, 1988), while resource dependence theory informs our understanding of gender diversity. According to this theory, a firm's actions are contingent upon both its internal capacities and external resources (Riaz et al., 2023). The inclusion of women on boards contributes unique and distinctive qualities to board independence (Eagly et al., 2003) and (Eagly & Johnson, 1990). Agency theory, on the other hand, is instrumental in categorizing board directors and assessing board independence (Hillman et al., 2000) and (Markarian & Parbonetti, 2007). It also serves as a framework for mitigating conflicts and addressing issues that may arise in the complex relationship between shareholders and corporate executives (Li et al., 2023).

Previous research has explored the concept of familial dominance in CG, highlighting that mechanisms such as the presence of independent directors on boards often appear to be largely symbolic (Sarwar & Khan 2022). Furthermore, recent research on Corporate Social Responsibility (CSR) has identified family ownership as a key factor contributing to the limited extent of CSR disclosures ((Belal & Owen, 2007). This raises questions about the efficacy of these CG mechanisms. Forker (1992) observed a tenuous connection between CG and the disclosure of share options, whereas Chen and Jaggi (2000) identified a robust association

between CG and financial disclosure. while existing research has predominantly focused on the impact of CSR committees on CSR disclosure, it has often overlooked the role of board of directors' characteristics in influencing sustainability disclosures (Mahmood et al., 2023). It's crucial to recognize that the board of directors bears responsibility for developing sustainable business strategies (Bilal et al., 2023).

Our study aims to investigate the impact of CG on sustainability disclosure. specifically, we are examining how various internal CG factors, such as board independence, board diversity, ownership structure, and board size, influence corporate social responsibility (CSR) disclosures. the relationship between sustainability disclosure and CG is positive; comprehensive corporate information disclosure can greatly benefit shareholders and stakeholders, facilitating informed investment decisions (Huang, 2010). when stakeholders and shareholders possess comprehensive financial and environmental information about companies, they can engage more effectively with these firms. our findings reveal that internal CG processes (Ramos-Meza et al., 2021), such as board independence and the presence of audit committees, exert a positive influence on CSR disclosures (Arslan et al., 2023).

A well-executed CSR disclosure strategy can significantly enhance a company's sustainability, leading to increased sales attraction, lower labour turnover rates, and the attraction of top-tier talent within the industry (Shaukat et al, 2024). Furthermore, it fosters positive community relationships and leaves a favourable impact on the public perception. this, in turn, facilitates easier access to capital, reduced operational costs, and smoother handling of substantial transactions. These collective improvements contribute to enhanced financial performance and accelerated business growth. this study is a valuable contribution to publicly listed companies in Pakistan that aim to enhance their business growth by leveraging both internal and external resources. Implementing the findings of this study can yield benefits for a wide spectrum of stakeholders, including shareholders, investors, and the board of directors, as well as the entire management control system (sarwar et al., 2023). It's worth noting that the board of directors plays a pivotal role in shaping sustainable business development policies, ensuring the effective utilization of corporate assets, and making critical decisions concerning CSR policies (Hennigfeld et al., 2006; Porter & Kramer, 2006).

The procedure of bibliometric analysis

Bibliometric analysis is conducted using the five steps outlined by (Zupic & Čater, 2015), as detailed in (Silvente et al., 2018). These five steps serve as a framework for conducting bibliometric analysis on sustainability disclosure and CG.

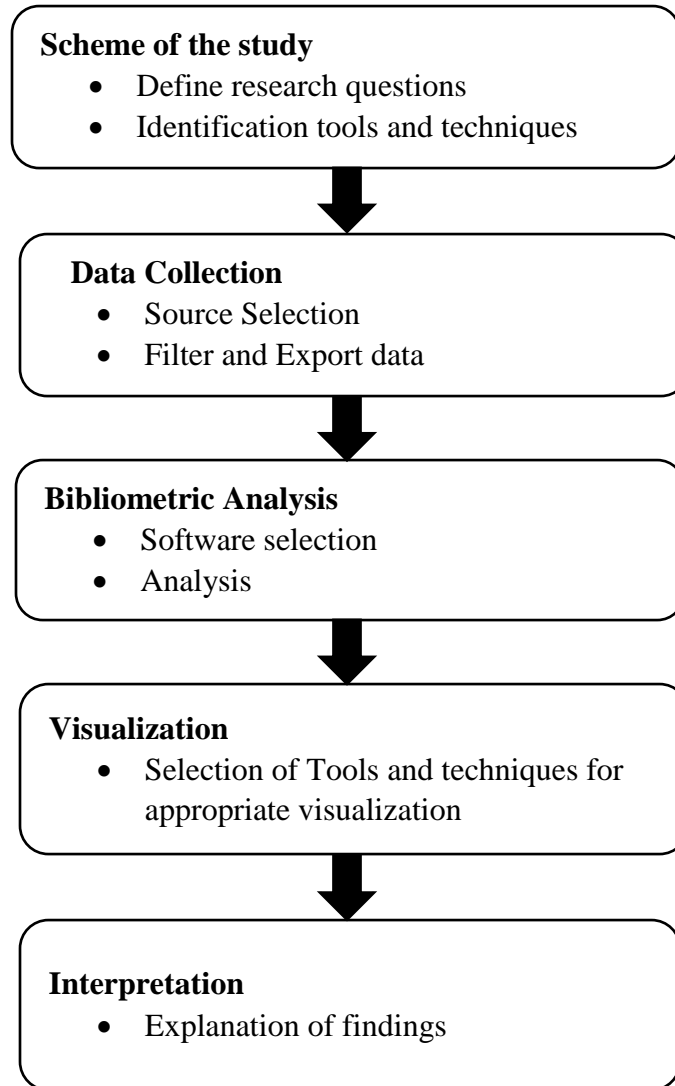


Figure 1. Workflow Chart.

SCHEME OF STUDY

To undertake this research, we seek to address various inquiries regarding sustainability disclosures and CG within the realm of business management. In today's landscape, numerous pressing questions demand answers, particularly regarding the impact of sustainability

disclosures on CG. consequently, this study endeavors to provide insights into the following questions:

1. What are the influential factors concerning sustainability disclosure and CG within the business domain?
2. By delving into the literature on sustainability disclosure and CG, what prevailing trends and key themes emerge?
3. What comprehensive insights can be gleaned from past research to inform future planning, and what prospective research agendas can be formulated?

We employ descriptive analysis to tackle the first question, where our objective is to identify pivotal sources, authors, countries, publications, and affiliations within the realm of sustainability disclosure and CG literature. our analysis encompasses factors like source impact, total citations, and annual net publications per core source and author. to further categorize these primary sources, we apply Bradford's law, which partitions sources into three distinct zones. zone 1, known as the nuclear zone, represents the most prolific sources. zone 2 signifies moderately productive sources, while zone 3 encompasses low-production sources (Viju & Ganesh, 2013). based on publication frequency and total citations, we recommend countries and affiliations that stand out prominently. to facilitate the integration of various empirical studies and chart future research trajectories. It's crucial to delineate core areas of study and primary themes. we harness technical tools such as co-occurrence maps, thematic maps, and thematic evolution maps to achieve this objective. in terms of terminology, we employ keywords plus for interpretation, as it elucidates the study's information objectives and aids in identifying and establishing connections among the most pertinent research domains. The author's keywords serve to highlight the study's key points. however, keywords plus offer more comprehensive patterns than the author's keywords (Tripathi et al., 2018).

OBJECTIVES, TOOLS, AND TECHNIQUES

The primary objective of this study is to investigate the influence of csr disclosure on CG and to establish the relationship between these two variables. we are specifically examining how internal CG factors, such as board independence, board diversity, ownership structure, and board size, impact corporate social responsibility disclosures. it's worth noting that recent research

often overlooks attributes of the board of directors that affect sustainability transparency. the board of directors plays a pivotal role in shaping long-term corporate objectives. additionally, we aim to explore ways to enhance our economic and social framework in today's globally interconnected landscape, particularly considering recent challenges posed by pathogens.

To facilitate a deeper understanding, we have structured our objectives as follows:

1. The initial objective is to identify significant publications, publishers, countries, and organizations. to accomplish this, we employ 'biblioshiny,' a web-based R toolkit ('Bibliometric 3.0'), designed for descriptive text analysis. within the 'biblioshiny' framework, we utilize research tools such as Bradford's Law, global citation metrics, and h, g, and m-index calculations.
2. The second objective is to pinpoint core research sources and emerging trends. we employ science mapping techniques, incorporating a theoretical framework and keywords plus as input data to achieve this goal.

Following the completion of these two objectives, we will provide a succinct explanation and define future research goals.

Composing of bibliometric data

Our bibliometric data can be segmented into two primary components. the initial part entails the selection of a suitable source from which we can amass and assess articles. in this regard, we have meticulously gathered data from the Scopus website pertaining to the subject of sustainability disclosures and CG. the formulation of an all-encompassing search query was undertaken in the subsequent phase. to this end, we focused on the domain of CSR disclosure and CG, employing a diverse array of keywords tailored to our objectives, thus ensuring optimal results. those keywords include (TITLE-ABS-KEY ("corporate social responsibility" OR CSR OR sustainability OR carbon OR "Carbon emission*" OR "climate change" OR ghg OR "greenhouse gas*" OR environment*) AND TITLE ("CG" OR board OR "board independence" OR "board gender" OR "board diversity" OR "audit committee" OR "ownership" OR "compensation" OR "board size") AND TITLE-ABS-KEY (disclosure*)) AND (LIMIT-TO (LANGUAGE , "English")). we have identified nearly 496 articles relevant to our search queries, and among these, 266 are closely aligned with our chosen topic. our approach to building a conceptual framework involves the extraction of thematic elements through keyword analysis. to ensure the effectiveness of our research, we have confined our search parameters

exclusively to journal papers and articles composed in English. this linguistic precision serves to facilitate a comprehensive bibliometric analysis, affording us a rich pool of resources for comparative evaluation, encompassing keywords, article origins, and affiliations. while we did include ten papers in languages other than English, our decision to focus on a single, precise language stem from its ability to enhance the efficiency of our keyword analysis. furthermore, we conducted a meticulous examination of the documents, leading to the exclusion of certain articles that failed to meet our study's specific requirements. our final selection comprises 266 articles, chosen for their high citation rates and recency.

Bibliometric Analysis and Visualization

Bibliometric analysis employs mathematical and statistical tools to assess books and media communication (Tunstel et al., 2020). this method primarily relies on the application of statistical tools and techniques to yield results. conversely, 'biblioshiny' is a user-friendly tool designed for non-programmers, offering a comprehensive platform for scientometric and bibliometric analysis. it encompasses various functionalities categorized into references, records, authors, conceptual structures, social structures, and more. utilizing this approach allows for the generation of results in the form of tables and graphs, a capability not typically found in other applications (Syahid).

Table 1 provides a comprehensive overview of sustainability disclosure and CG descriptions. before delving into the subsequent results, we meticulously curated and finalized a total of 266 documents. the time frame selected for our literature review on sustainability disclosures and CG spans from 1995 to 2021. in this extensive examination, we have encountered a remarkable diversity of author-generated keywords, totaling 577, along with an additional 276 keyword plus entries. an impressive 642 authors have contributed to this body of work, with an overwhelming majority of 609 multi-authored documents and a more modest count of 33 single-authored pieces. CG authors exhibit a robust inclination towards collaboration, evident in the substantial co-authorship rate observed throughout the content. the collaboration rate for single-authored documents stands at 35. on average, each author has produced approximately 0.414 documents, while the authors per document ratio is 2.41, underscoring the prevalence of collaborative efforts. specifically, collaboration with a co-author result in an average of 2.7 documents per partnership. as we delve into the document types present in our collection, we observe a diverse array of sources. we've gathered 233 articles, 7 book chapters, 13 conference papers, and an

additional 13 reviews, offering a comprehensive perspective on sustainability disclosures and CG across various publication formats.

Table 1: Descriptive Information

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1995-2021
Sources (Journals, Books, etc.)	137
Documents	266
Average years from publication	3.93
Average citations per documents	25.61
Average citations per year per doc	3.939
References	15712
DOCUMENT TYPES	
Article	233
Book chapter	7
Conference paper	13
Review	13
DOCUMENT CONTENTS	
Keywords Plus (ID)	276
Author's Keywords (DE)	220
AUTHORS	
Authors	642
Author Appearances	718
Authors of single-authored documents	33
Authors of multi-authored documents	609
AUTHORS COLLABORATION	
Single-authored documents	35
Documents per Author	0.414
Authors per Document	2.41
Co-Authors per Documents	2.7
Collaboration Index	2.64

Top Author Impact Based on Citation

Table 2 provides an overview of the most influential authors in the realm of CG and sustainability disclosure literature. the ranking of these core authors is based on three crucial indices: h-index, g-index, and m-index, reflecting their substantial impact on the field (Arslan & Bashir, 2021).

PUCHETA-MARTÍNEZ MC stands out as the foremost author on this list, renowned for their significant impact in the field. In their seminal work of 2018, they meticulously examine the intricate interplay between gender diversity, corporate performance, and corporate social responsibility disclosure. This publication illuminates both the advantages and disadvantages of having women on boards of directors (Pucheta-Martínez, Bel-Oms, & Olcina-Sempere, 2018). It critically assesses the impact of female board members on firm performance, contributing valuable insights. The second highest-ranked author, MUTTAKIN, focuses their research on board attributes, board gender diversity, and corporate social responsibility disclosures, with a specific emphasis on Bangladesh. Their 2013 paper sheds light on a fascinating correlation: when family ownership increases and female board representation rises, corporate social responsibility disclosure tends to decrease (Khan, Muttakin, & Siddiqui, 2013). Hussainey, our third top author, delves into the intricate relationship between board and audit committee characteristics and corporate social responsibility disclosures. Notably, their research underscores the positive influence of board size, board structure, and the audit committee on corporate transparency. However, it highlights a negative correlation between board diversity and this transparency (Wang & Hussainey, 2013). The fourth author, Khan et al., embarks on a study exploring the link between CG and corporate social responsibility disclosures, focusing on Bangladesh's publicly listed companies. Their research, conducted in 2013, provides valuable evidence regarding the relationship between these two critical variables (Khan et al., 2013).

In another corner of the globe, the next author investigates Jordanian banks, examining the correlation between board characteristics and corporate social responsibility disclosures. Their findings reveal that lower disclosure levels often coincide with higher board independence, and interestingly, the presence of female directors tends to exert a negative influence on disclosure levels (Ghabayen, Mohamad, & Ahmad, 2016). Moving to Malaysian public corporations, the subsequent author, Said, explores the intricate relationship between Corporate Social Responsibility Disclosures (CSR) and CG (Said, Zainuddin, & Haron, 2009). Two authors, in a study set in Indonesia, dive into the association between firm size, CG, and carbon pollution exposure. Their research primarily focuses on the mining and agriculture sectors, aiming to dissect how businesses manage their interactions with natural resources (Nasih, Harymawan, Paramitasari, & Handayani, 2019). Finally, another group of highly cited authors endeavours to examine the impact of board independence and ownership on Corporate Social Responsibility

Disclosures (CSR D). their findings underscore the inverse relationship between family-owned businesses and CSR D, while highlighting the pivotal role of board performance in shaping CSR D outcomes (Abdullah, Mohamad, & Mokhtar, 2011).

Table 2: Author Impact based on citation

Author	h index	g index	m index	TC	NP	PY start
Pucheta-Martnez Mc	5	6	1.25	72	6	2018
Muttakin Mb	5	5	0.556	543	5	2013
Hussainey K	4	4	0.333	260	4	2010
Khan A	4	4	0.444	485	4	2013
Khan I	3	3	0.5	73	3	2016
Mohamad Nr	3	3	0.273	38	3	2011
Said R	2	4	0.154	257	4	2009
Harymawan I	2	3	0.667	38	3	2019
Nasih M	2	3	0.667	38	3	2019
Abdullah Sn	2	2	0.182	26	2	2011

Country Scientific Production

Based on the annual scientific output, there was limited production concerning sustainability disclosures and CG literature between 1995 and 2009. however, following this period, there has been a gradual increase in research output on this subject, with a notable surge, particularly in Indonesia and china. presently, from 2018 to 2021, the significance and implications of this research have extended across various domains and regions globally.

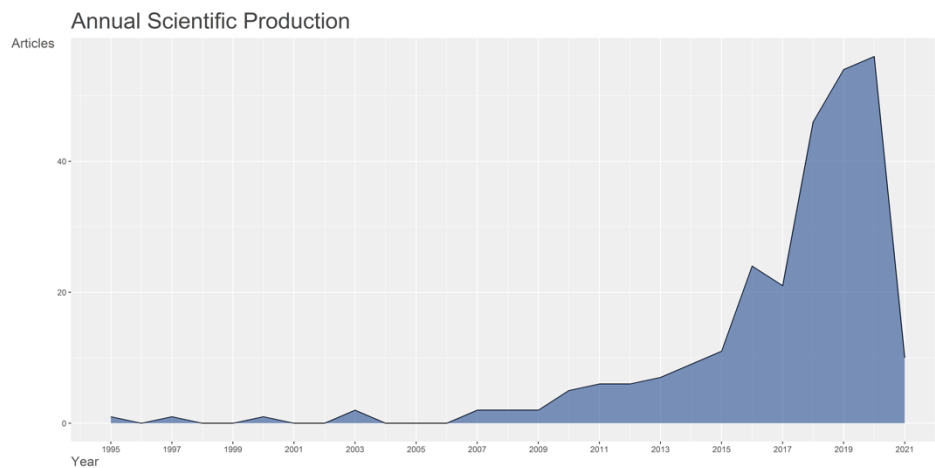


Figure 2. Annual scientific production

Threefold Analysis

Figure 3 explains the threefold analysis of sustainability disclosures and CG publications at the intersection of sustainability disclosures and CG. the figure's left side is dedicated to publications and their corresponding keywords, while the middle section showcases the countries of origin. on the right side, affiliations are displayed in the lower section of the image. this visualization distinctly highlights Indonesia’s prominence as a significant contributor in the field of corporate social responsibility, with a focus on factors such as firm size and stakeholder management.

Notably, Indonesia boasts affiliations that rank prominently in this domain. following closely, China, Malaysia, Spain, the UK, and Italy emerge as noteworthy participants in disclosing their CG information. these nations, through their research and affiliations, have effectively tackled critical issues pertaining to corporate social responsibility disclosures and CG studies.

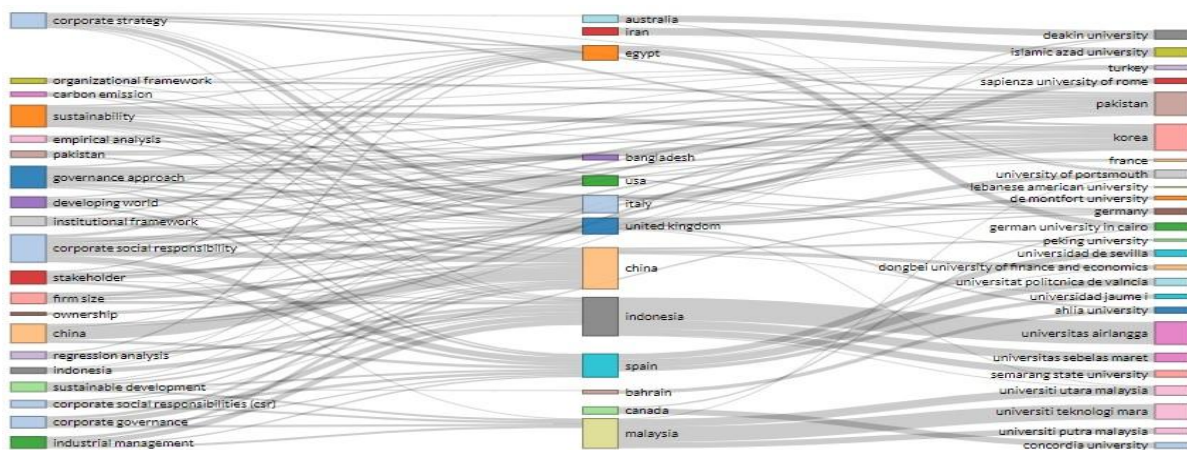


Figure 3: Threefold analysis of sustainability disclosures and CG

Mostly Globally Cited Article

The top articles in CG and sustainability disclosure publications are recognized in this area. The top 10 papers that have received the most citations worldwide are presented in table 4. CG and Corporate Social Responsibility Disclosures," offering evidence from an emerging economy. this paper, conducted by Arifur Khan and his colleagues, delves into the intricate relationship between CG and corporate social responsibility disclosures within the annual reports of companies listed in Bangladesh. Remarkably, this paper has amassed a significant 377 citations, a testament to its high impact (Khan et al., 2013). following closely in terms of citations is a paper discussing the nexus between “Sustainability Accountability and CG” in a global organizational context. Authored by Kolk in 2008, this paper has garnered a total of 353

citations, averaging 25.14 citations per year (Kolk, 2008). the third article, published in 2015, revolves around the themes of gender diversity and board independence, with a total of 306 citations, the author underscores the potential positive impact of independence and gender diversity in board composition on both financial and non-financial objectives (Liao, Luo, & Tang, 2015). ranked fourth in citations is a study investigating the influence of CG on sustainability disclosure, revealing a positive association between these variables. this research has been cited 287 times and aims to unravel the effects of board size, management, and structure on corporate social responsibility disclosures (Michelon).

The fifth highly cited article canters on a study conducted in Malaysia concerning publicly listed companies, probing the intricate links between Corporate Social Responsibility Disclosure (CSR) and CG, and has accrued 254 citations (Said et al., 2009). the subsequent study concentrates on the relationship between CG and CSR within the banking sector, addressing a prior research gap in this specific domain. author focused on the US banking sector for their investigation and garnered 241 citations (Jizi, Salama, Dixon, & Stratling, 2014). turning to Malaysia's listed corporations, the subsequent study delves into the interplay between ownership structure and CSR. this work, authored by Ghazali in 2007, has secured 232 citations and successfully establishes a connection between ownership arrangements and corporate social responsibility disclosures (Ghazali, 2007). in another exploration set in Bangladesh, Khan (2010) directed their attention to commercial banks, emphasizing the critical significance of sustainability disclosures and CG in this sector. this study, with a total of 209 citations, offers empirical evidence of the relationship between these pivotal variables (Khan, 2010). the next highly cited study, undertaken in 2017, investigates Board Gender Diversity and its influence on corporate responses to sustainability issues. authored by McIlkenny, this research, with 152 citations, sheds light on the impact of women's participation on boards concerning organizational responses to stakeholder demands for increased reporting on global warming challenges (McIlkenny). concluding our list of highly cited studies, the investigation by Khan et al. (2015) explores the effect of CG on industry-specific environmental reporting. with 148 citations, this research highlights the substantial influence of CG on companies' environmental reporting practices (Muttakin, Khan, & Subramaniam, 2015).

Table 3: Mostly Globally Cited Article

Paper	Total citation	Total citation per year
CG and Corporate Social Responsibility Disclosures: Evidence from an Emerging Economy	377	41.889
Sustainability, Accountability and CG: Exploring Multinationals' Reporting Practices	353	25.214
Gender diversity, board independence, environmental committee, and greenhouse gas disclosure	306	43.714
The effect of CG on sustainability disclosure	287	28.7
The relationship between corporate social responsibility disclosure and CG characteristics in Malaysian public listed companies	254	19.538
CG and Corporate Social Responsibility Disclosure: Evidence from the US Banking Sector	241	30.125
Ownership structure and corporate social responsibility disclosure: some Malaysian evidence	232	15.467
The effect of CG elements on corporate social responsibility (CSR) reporting.	209	17.417
Board Gender Diversity and Corporate Response to Sustainability Initiatives: Evidence from the Carbon Disclosure Project	152	30.4
The Influence of CG, Industry and Country Factors on Environmental Reporting.	148	5.92

Corresponding Author Country

Table 4 and figure 4 illustrates how various countries exhibit distinct publication patterns, often involving collaboration with foreign co-authors. notably, Indonesia leads the list with an impressive 24 publications, comprising 22 Single-Country Publications (SCP) and 2 Multiple-Country Publications (MCP). China secures the second position, boasting 21 publications, with 20 SCP and 1 MCP. Australia claims the third spot, tallying 17 publications, featuring 22 SCP

and 6 MCP. Malaysia ranks fourth with a total of 15 publications, encompassing 14 SCP and 2 MCP. Spain secures the fifth position with an equivalent count of 15 articles.

Table 4: Corresponding Author Country

Country	Articles	Freq	SCP	MCP	MCP Ratio
INDONESIA	24	0.13043	22	2	0.0833
CHINA	21	0.11413	20	1	0.0476
AUSTRALIA	17	0.09239	11	6	0.3529
MALAYSIA	15	0.08152	14	1	0.0667
SPAIN	15	0.08152	13	2	0.1333
UNITED KINGDOM	12	0.06522	5	7	0.5833
ITALY	10	0.05435	10	0	0
PAKISTAN	7	0.03804	5	2	0.2857
FRANCE	5	0.02717	3	2	0.4
INDIA	5	0.02717	5	0	0

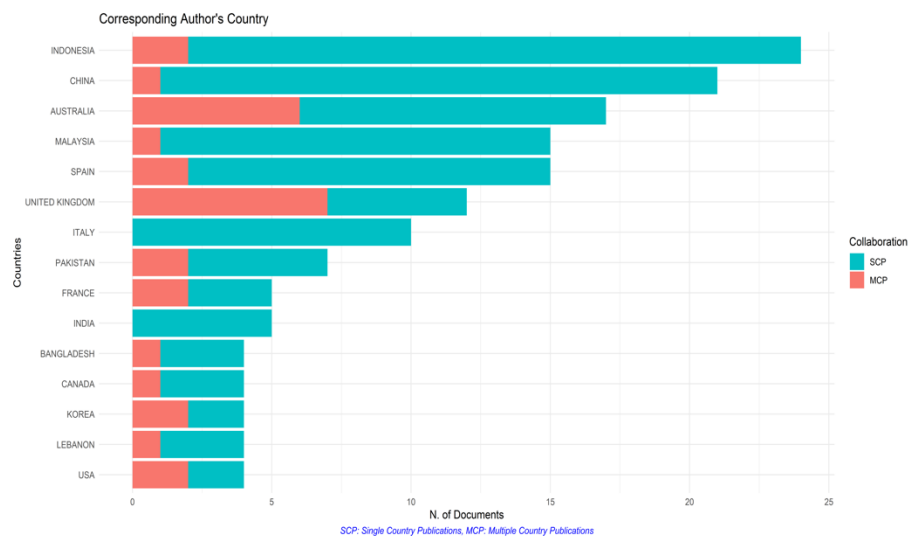


Figure 4:

Corresponding Author Country

Most Cited Countries

Table 5 provides an in-depth analysis of the leading countries in terms of article publication and citation within the domains of sustainability disclosures and CG. Australia secures the top position with an impressive total citation count of 1158, making it the highest contributor in

terms of publications, representing a substantial frequency of 68.12%, a noteworthy achievement. Malaysia holds the second spot with a commendable total citation count of 627 and a publication frequency of 41.80%. Following closely are the Netherlands, Lebanon, and the UK, each accumulating total citation counts exceeding 400. Italy, with a total citation count of 341, further strengthens the ranks. both Bangladesh and China are recognized for their contributions, with total citation counts exceeding 200. Pakistan, although ranking lower in total citation count with 179, maintains a significant presence in the field of Corporate Social Responsibility Disclosures (CSR) and CG, marked by a publication frequency of 25.57%.

Table 5: Top Countries in Terms of Citation and Publications

Country	Total Citations	Average Article Citations
AUSTRALIA	1158	68.12
MALAYSIA	627	41.80
NETHERLANDS	489	163.00
LEBANON	445	111.25
UNITED KINGDOM	411	34.25
ITALY	341	34.10
BANGLADESH	238	59.50
CHINA	220	10.48
CANADA	187	46.75
PAKISTAN	179	25.57

Most Cited Sources

We employ Source Impact and Bradford Law methodologies to identify the core journals within the realm of sustainability disclosures and CG literature. table 6 offers a comprehensive ranking of articles, utilizing criteria such as h-index, m-index, g-index, total citation (TC), net production (NP), and publication starting year (PY start). table 7, on the other hand, utilizes Bradford Law to categorize journals into three distinct zones. Zone 1 signifies the nucleus of core sources for publishing articles related to Corporate Social Responsibility Disclosures (CSR) and CG. this zone underscores their paramount importance in the field of CG publications. the Journal Ranking, as depicted in table 6, aligns with Bradford Law's categorization. out of the 266 articles we've gathered, it's worth noting that the top 10 articles reside in Zone 1 according to Bradford

Law. these 10 journals thus emerge as the cornerstone publishing sources for sustainability disclosures and CG literature

Table 6: Top Journals According to Source Impact

Source	h-index	g-index	m-index	TC	NP	PY start
Corporate Social Responsibility and Environmental Management Sustainability (Switzerland)	9	12	0.751	336	12	2010
Business Strategy and The Environment	8	14	1.334	223	17	2016
Social Responsibility Journal	8	10	0.572	614	10	2008
Journal of Business Ethics	7	11	0.539	445	11	2009
CG (Bingley)	7	8	0.778	1055	8	2013
Australasian Accounting, Business and Finance Journal	5	7	0.5	278	7	2012
Accounting Research Journal	4	5	0.667	61	5	2016
International Journal of Accounting and Information Management	4	4	1	53	4	2018
Managerial Auditing Journal	4	4	0.8	56	4	2017
	4	4	0.148	291	4	1995

Table 7: Journal Ranking According to Bradford Law

Sources	Rank	Freq	Cum Freq	Zone
Sustainability (Switzerland)	1	17	17	Zone 1
Corporate Social Responsibility and Environmental Management	2	12	29	Zone 1
Social Responsibility Journal	3	11	40	Zone 1
Business Strategy and The Environment	4	10	50	Zone 1
Journal of Business Ethics	5	8	58	Zone 1
CG (Bingley)	6	7	65	Zone 1
International Journal of Innovation, Creativity, And Change	7	6	71	Zone 1
Australasian Accounting, Business and Finance Journal	8	5	76	Zone 1
Journal of Asian Finance, Economics and Business	9	5	81	Zone 1
Academy of Accounting and Financial Studies Journal	10	4	85	Zone 1

Keyword Analysis

Table 8 provides a comprehensive breakdown of the primary core terms that feature prominently within articles. These terms are classified into four distinct categories for detailed analysis. in the

first section, we introduce the core keyword, followed by the second section wherein we delve deeper into the specific terms and their respective frequencies of occurrence. The second section is dedicated to the author's keywords, while the third focuses on terms found within the abstracts, and the fourth canters on terms present in the titles.

Across all sections, the most prevalent terms are consistently "CG," "CSR," "disclosures," "sustainability," and "board." These terms collectively represent the lexicon associated with the critical domains of sustainability disclosure and CG, effectively demonstrating the intricate relationship between these two variables. notably, "CG" emerges as the most frequently used term across all sections, appearing a remarkable 127 times. Conversely, within the author's keywords, "corporate" takes precedence as the most frequently employed term. In the abstracts, "disclosures" is the standout term, featuring prominently with a staggering 835 occurrences. Lastly, in the titles, "governance" stands out as the most commonly used term.

Table 8: Core Words Analysis

Keyword Plus		Author Keyword	
Words	Occurrences	Words	Occurrences
CG	127	Corporate	296
Corporate social responsibility	63	Governance	170
Disclosures	25	Disclosures	149
Corporate social responsibility disclosures	22	Social	133
Board of directors	18	Responsibility	110
CSR disclosures	18	Board	69
Ownership structure	17	Evidence	67
Sustainability	14	Environmental	61
Board independence	13	CSR	41
CSR	12	Ownership	40

Table 9: Word Count

Abstract		Title	
Words	Occurrences	Words	Occurrences
Disclosure	835	Governance approach	20
Corporate	806	Corporate social responsibility	16

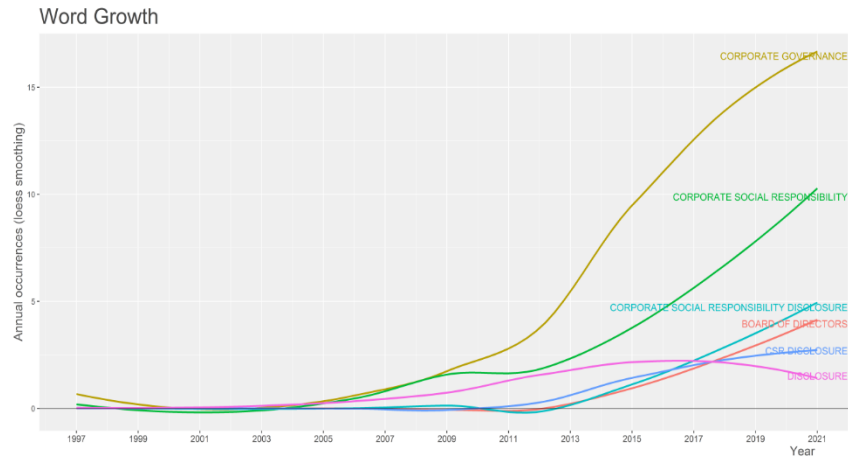


Figure 6: Word growth over time

Most Relevant Affiliations

As depicted in table 9, the University of AIRLANGGA emerges as the preeminent institution, boasting an impressive record of 14 articles on Corporate Social Responsibility Disclosures (CSR) and CG. this accomplishment places the university in the top position among affiliations, solidifying its reputation as a robust research hub for CSR and CG studies. following closely is UNIVERSITI TEKNOLOGI MARA, a university founded in Malaysia renowned for its global significance, particularly in the realm of entrepreneurship and various other disciplines, securing the second-highest affiliation. the University of UUM takes the third position, contributing significantly with 7 publications in this field. notably, Deakin University, a renowned public institution in Australia, has made notable strides with 6 articles published in this domain (University, 2020). it's worth noting that there are ten comprehensive universities actively engaged in the study of Islamic cryptocurrency literature, reflecting the diverse research interests within this specialized field.

Table 9: Most Relevant Affiliations

Affiliations	Articles
UNIVERSITAS AIRLANGGA	14
UNIVERSITI TEKNOLOGI MARA	10
UNIVERSITI UTARA MALAYSIA	7

DEAKIN UNIVERSITY	6
UNIVERSITY OF PORTSMOUTH	5
ISLAMIC AZAD UNIVERSITY	4
LEBANESE AMERICAN UNIVERSITY	4
UNIVERSIDAD DE SEVILLA	4
UNIVERSITAS SEBELAS MARET	4
UNIVERSITAT POLITCNICA DE VALNCIA	4

Collaboration Network

Table 10 delineates the intricate web of international collaboration among nations in addressing the global concern of Cybersecurity and Resilience of Digital Systems (CSR). this table showcases noteworthy instances of cooperation on a global scale. the United Kingdom has engaged in fruitful partnerships with Egypt, contributing to a significant body of knowledge as evidenced by their participation in five scholarly articles. meanwhile, China has forged alliances with Pakistan, resulting in four impactful publications. furthermore, Australia has actively collaborated with the United Kingdom, yielding two substantial articles. China's partnership with New Zealand has also borne fruit, resulting in two noteworthy publications. these interconnections and collaborations are presented comprehensively in the table above, reflecting the truly global nature of the discussion surrounding CSR.

Table 10: Collaboration Network

From	To	Frequency
UNITED KINGDOM	EGYPT	5
CHINA	PAKISTAN	4
AUSTRALIA	UNITED KINGDOM	2
CHINA	NEW ZEALAND	2
INDONESIA	MALAYSIA	2
MALAYSIA	AUSTRALIA	2
MALAYSIA	UNITED KINGDOM	2
SPAIN	PORTUGAL	2
UNITED KINGDOM	BAHRAIN	2
UNITED KINGDOM	MALAWI	2

Conceptual Framework

In this section, we aim to elucidate the connections between keywords by employing various thematic approaches. initially, the primary objective of our study is to construct a co-occurrence

network, facilitating an exploration of diverse themes pertaining to CSR disclosures within the context of CG over time. subsequently, we leverage this network to map out these keyword relationships on a two-dimensional matrix, commonly referred to as a 'thematic map.' this map serves as a valuable tool for evaluating the relevance and scope of these thematic dimensions.

Co-occurrence Network

The co-occurrence network divides into four distinct clusters, as vividly depicted in figure 7, which showcases the keyword plus co-occurrences network. the red cluster occupies a central and highly prominent position, signifying its elevated significance. the blue and green clusters are interconnected, forming cohesive thematic units. within this network, "CG" stands out as a highly influential variable, boasting the highest centrality. each cluster effectively segments the CG literature into distinct research keywords. the red cluster, positioned at the heart of this network, constitutes the core of CG research. it encompasses various related topics and keywords, creating an extensive network that includes terms such as CSR, sustainability, board characteristics, ownership structure, and environmental disclosures. the green cluster, on the other hand, delves into the multifaceted research streams surrounding the board of directors. here, studies explore diverse aspects of board composition, incorporating keywords like gender diversity, board diversity, and CSR reporting. the blue cluster sheds light on the significance of CSR reporting. within this group, research endeavors focus on both financial and non-financial reporting within organizations, offering insights into the performance levels of firms through these reports. lastly, the purple cluster underscores the critical role of CSR disclosures. here, studies are dedicated to investigating CSR disclosures and their pivotal role in conveying a firm's performance to stakeholders.

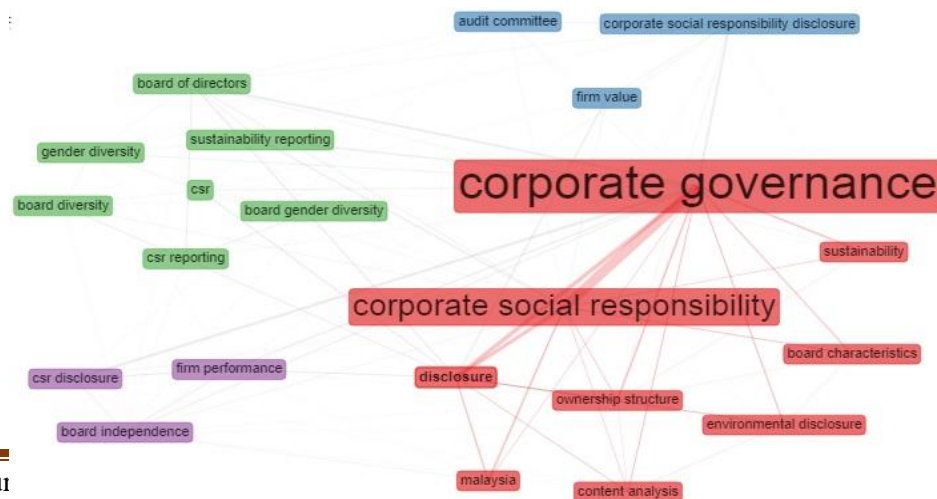


Figure 7: Co-Occurrences Network

Thematic Map

For the further interpretation of the result, we have delineated specific research themes. these themes aid in gauging the significance and evolution of our study topic, and we've organized them within a conceptual framework (Cobo, López-Herrera, Herrera-Viedma, & Herrera, 2011). figure 8 presents the resulting thematic map, where the x-axis represents the centrality of the map, and the y-axis denotes the map's density. centrality measures the core idea's significance, while density gauges its growth over time. the map is partitioned into four distinct sections. in the upper left section, we find niche themes characterized by high density but lower centrality. moving to the lower left section, we encounter emerging or declining themes. these represent novel areas of research, particularly valuable when CSR disclosure trends are in flux and can potentially merge with new themes for enhanced research. the lower right area of the map represents the foundational themes of our study, marked by high relevance but lower density. this domain offers ample opportunities for further research. the upper right section showcases motor themes, distinguished by both high density and high centrality, signifying their developed and critical nature. the size of the thematic map varies based on the features encapsulated within the themes. this thematic map was constructed based on data spanning from 2003 to 2021. clusters within the map vary in the number of items they encompass. for instance, the 1st group comprises a single item, while the 2nd and 3rd groups consist of two items each. in the 4th cluster, there are four items embedded within the themes

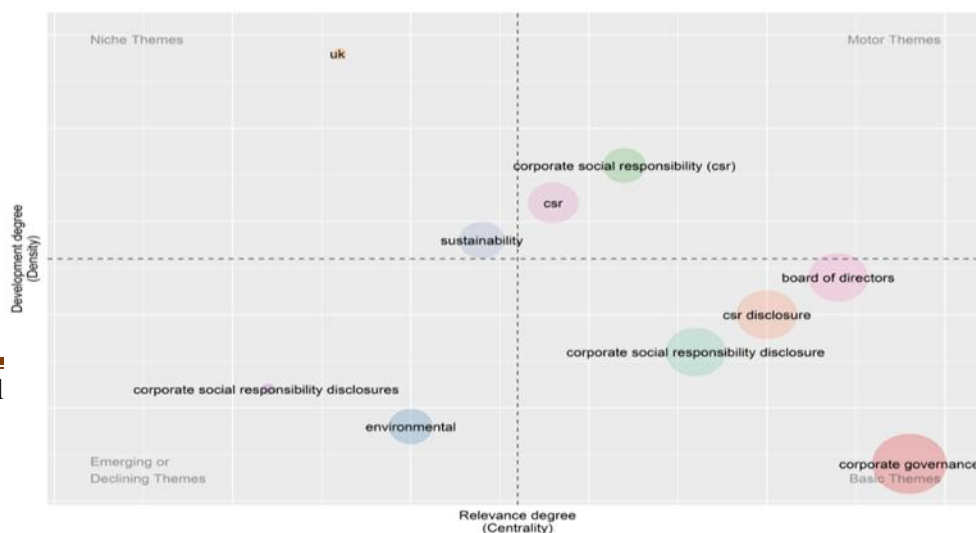


Figure 8: Thematic Map

Thematic Evaluation

Thematic evaluation serves as a historical compass, charting the evolution of literature reviews in the domains of CG and Corporate Social Responsibility Disclosures (CSR). through the utilization of keyword plus and thematic evaluation, we trace the journey of thematic development. to perform this thematic evaluation, we employ the 'biblioshiny' tool, dividing our analysis into four distinct time periods. this chronological classification, driven by expert author evaluation, offers a more precise depiction of thematic evolution. the initial period spans from 1995 to 2016, during which comprehensive literature reviews delved into topics such as board of directors, ownership structure, corporate social responsibility, CG, sustainability, and board characteristics. the second period, covering 2016 to 2017, zeroed in on CSR, encompassing all aspects related to disclosure within the CSR literature. in the third period, which unfolded in 2019, the spotlight shifted toward corporate financial performance. the fourth period, spanning from 2020 to 2021, witnessed further evolution in CSR literature, incorporating diverse variables. presently, this area remains under observation, paving the way for future developments.

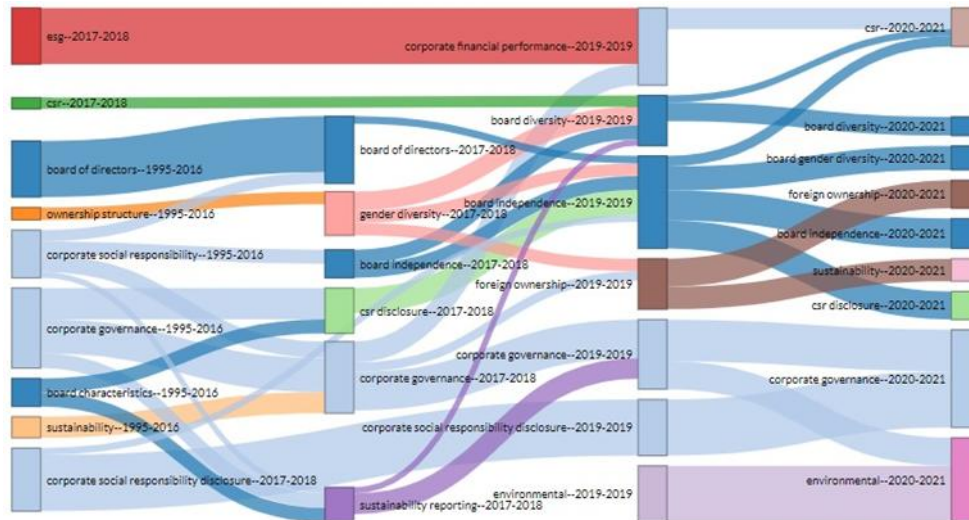


Figure 9: Thematic Evaluation

Conclusion

This study delves into the critical nexus between sustainability disclosures and CG, exploring various facets of this multifaceted topic. These diverse aspects serve as a springboard for future investigations. Within this study, we've identified four top-tier journals that exert substantial influence on the CG and Corporate Social Responsibility Disclosures (CSR) literature: "Corporate Social Responsibility and Environmental Management," "Sustainability," "Business Strategy and the Environment," and "Journal of Business Ethics." These journals constitute the crux of impactful literature in this field. According to Bradford's law, the top ten journals in this domain are led by "Sustainability," followed by "Corporate Social Responsibility and Environmental Management" and "Social Responsibility Journal." Among core journal articles, the most globally cited one pertains to "CG and Corporate Social Responsibility Disclosures," amassing an impressive 377 citations. Notably, keywords such as "CG," "corporate," "disclosure," and "governance approach" frequently surface in keyword plus, authors' keywords, abstracts, and titles. Authors Pucheta-Martinez Mc and Muttakin Mb emerge as influential figures within the CG literature. Leading countries in terms of citation and publications include Australia, Malaysia, and the Netherlands. Affiliations with the highest impact include the University of Airlangga, contributing 14 articles, and UNIVERSITI TEKNOLOGI Mara, which boasts the highest publication output on this topic. In terms of authorship, the most prolific countries are Indonesia, China, and Australia, characterized by their frequent contributions and substantial

article output. key collaboration networks are observed between the UK and Egypt, with the UK also engaging in partnerships with Bahrain and Malawi. by employing the "biblioshiny" R-package's conceptual framework, we've identified four core research streams in CSRD and CG: CG, CSRD, sustainability, and environmental reporting. these streams collectively address a myriad of issues within the realm of CSRD and CG. Subsequently, we've constructed a thematic map comprising emerging and declining themes, basic themes, motor themes, and niche themes. the basic or transversal theme center on CG's significance, while emerging themes delve into methodologies for addressing CSRD and CG issues. CSR assumes prominence within the motor themes.

Future Recommendations

It is clear from the results of our thorough investigation into the complexities of CG and their bearing on Corporate Social Responsibility Disclosure (CSRD) that many directions still need to be investigated and are awaiting the astute eyes of following researchers. The important directions that potentially add to the body of knowledge already available in this field are outlined in the following points.

1. In forthcoming research, an expansion of the sample size along with an extended data analysis period could augment the depth of inquiry. Future investigations might also consider incorporating additional variables to potentially yield more substantial and meaningful outcomes.
2. While this study concentrated exclusively on the Nigerian banking sector, it is advisable for future research endeavours to broaden their focus to encompass a diverse array of sectors, such as manufacturing, to elucidate the ramifications of board structure on CSR practices more comprehensively.
3. In upcoming research, it would be prudent to explore various other CG (CG) characteristics that could exert an influence on the relationship between the Audit Committee (AC), board, and the extent of CSR disclosure. These could encompass factors like board ownership, age, the role of auditors, educational diversity within the board, and interlocking directorships.

4. Future investigations may significantly contribute to the field by undertaking comparative analyses, pitting India against other developing nations with respect to CSR disclosure. Additionally, delving into the intricate links between CSR disclosure, ownership, share prices, competitive advantage, investment, and operational efficiency promises to be a compelling and rewarding avenue of exploration.
5. Subsequent research should extend its purview to examine the repercussions of competitive intensity and the involvement of institutional investors. It is worth noting that our study, grounded in the legitimacy theory, underscores the importance of contemplating alternative theoretical perspectives in forthcoming research endeavours.

Limitations of the Study

Our research is not exempt from certain limitations. To begin, our study's sole focus on a single country, while yielding meaningful results, potentially restricts their applicability to a broader context. However, it's important to note that the variations in CG practices across the globe may serve as a catalyst for inspiring research endeavours in other nations. moreover, the arduous process of manually collecting data significantly consumed our time during the analysis phase. Another noteworthy limitation is the relatively sparse literature available on the intersection of CG and CSRD within the realm of business and management. additionally, it's worth acknowledging that this study relies predominantly on author-generated keywords, as the availability of keyword plus terms is limited. Consequently, our exploration and the development of various themes are primarily rooted in these author-provided keywords, reflecting the constraints imposed by the scarcity of keyword plus data.

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