

Global Research on Women as Board of Directors _ A Bibliometric Analysis

Lakshmi Murthy^{1*}, Poornima Tapas², Debasis Mohanty³

¹ Professor of Practice, ITM University Raipur, Chhattisgarh, India. Email: phdlakshmimurthy@gmail.com
<https://orcid.org/0000-0001-6845-3442>

² Professor, Symbiosis Institute of Business Management, Pune, Maharashtra, India.
Email id: poornima.tapas@sibm.edu.in
<https://orchid.org/0000000226146337>

³ Assistant Professor, School of Commerce Management and Research, ITM University Raipur, Chhattisgarh, India.
Email: debasisacademics@gmail.com
<https://orcid.org/0000-0001-7337-5784>

*Corresponding Author

Abstract:

Women board directors in India face challenges including low representation, biases, limited mentorship, family expectations, and male-dominated networks. Glass ceiling, institutional barriers, and lack of supportive policies also hinder their progress. Increasing gender diversity at all levels, fostering an inclusive corporate culture, understanding global initiatives as well as their successful impact, are some of the measures to be taken for addressing these issues. This study aims to examine the literature on women's representation on corporate boards focusing on both global and Indian contexts. The analysis uses various methodologies, including citation analysis, bibliographic coupling, and text analysis, to analyse 1714 articles from 1965 to 2022. The findings provide a comprehensive understanding of the characteristics and patterns observed in studies pertaining to women serving as members of corporate boards. The findings hold significance for professionals in corporate governance and diversity, as well as research scholars in India. The analysis provides insight into the nature and trends of research on women as board of directors, encouraging women to prepare for board positions and encourage corporations to appoint women on their boards. The need for wider research and a paucity of research on women as board of directors in the corporate sector is essential for achieving gender parity in India.

Keywords: Women, Board of Directors, Gender Diversity, Corporate Governance, Board Composition, Board Diversity, Vosviewer, Biblioshiny and bibliometric

1. Introduction

Women form almost 50% of the world population and participation of women in the workforce has increased (Ng & Sears, 2017) from 37% to 47% globally. The representation on boards is still very low in most of the countries especially in a growing economy like India, where it has grown from 5% to 17% in last one decade despite the introduction of quota in Companies act 2013 (Catalyst, 2019; Ghosh, 2017; Knippen et al., 2018; Seo et al., 2017b; Wiley & Monllor-Tormos, 2018) and those who have board experience keep getting circulated (Torchia et al., 2018; Vu et al., 2018). Also despite the legislative measures it is the Chairman who decides on new addition through references and networking (Ghosh, 2017; Hurn, 2012; Isidro & Sobral, 2015a; Sanan, 2016; Thomas & O'Neal, 1995). Need for women on board today is a business case (Haldar et al., 2015) rather than on fairness and equity (Torchia et al., 2011a; Wiley & Monllor-Tormos, 2018). Women bring in different voice based on their background and experience. Women take their role seriously resulting in improved corporate governance (Singh & Vinnicombe, 2004a). Because of different perspectives decision making improves (Torchia et al., 2018).

A diverse board is more stronger as they bring in diverse experience, expertise and perspective (Erhard et al., 2003; Estélyi & Nisar, 2016; Gul et al., 2011; Joecks et al., 2019; Samara et al., 2019) and reduces asymmetry in information sharing in equity markets (Abad et al., 2014) but still CEOs look for agreement rather than diversity (Dal Magro & Klann, 2021) or cite non availability of women leaders (Sonnabend, 2015). Considerable research has investigated that board gender diversity (BGD) enables a better monitoring of management, divergent thinking, increases board independence, expands perspective, removing "male group think", improving attendance behaviors, better decision making, objectify discussions, act as mediators, improve brand image as trustworthy board, improve innovation, communication at workplace, impact corporate governance, social, ethics and compliance (Ahmadi et al., 2018; Cook & Glass, 2015; Dowling & Aribi, 2013; Ghosh, 2017;

Hutchinson et al., 2015; Isidro & Sobral, 2015b; Liao et al., 2015; Samara et al., 2019; Seo et al., 2017a; Shan et al., 2018; Singh & Vinnicombe, 2004b; Srinivasan & George, 2013; Torchia et al., 2011a, 2018) and greater resource provisions (Isidro & Sobral, 2015c; Joecks et al., 2019; Wiley & Monllor-Tormos, 2018). Having said that, mere tokenism (Cook & Glass, 2015; Dowling & Aribi, 2013; Torchia et al., 2011a) may not achieve any impact on firm performance as women get isolated, not listened to, not taken seriously (Sanan, 2016). The impact of diversity of the board depends on the women members present in nomination committee (Hutchinson et al., 2015). Moreover, the presence of women at the board level improves female representation at all levels (Cook & Glass, 2015; Skaggs et al., 2012). Women have communal leadership trait and hence get roles during crisis to “clean up young men’s mess” (Kulich et al., 2015; Torchia et al., 2018).

Historically, “Old boys network” together with “Glass ceiling” seems to be a challenge for women’s career progression (Adams, 2016; R. Burke & Vinnicombe, 2005; Skaggs et al., 2012) but there are few who have managed to break the glass ceiling and receive lot of media attention (Gulamhussen & Santa, 2015). Another research area would be to explore women representation on board in countries which have lower representation of women in general workforce and compare with countries which have better women representation (Hillman et al., 2007).

The study on bibliometric analysis on board of directors is limited (Trinarningsih et al., 2021) and further limited is the study on women’s journey, experiences, and challenges as board directors in India. The academic research on women directors on corporate boards in India is at a very nascent stage compared to western world. This study is different from the previous research as follows: 1) the study performs a comprehensive review of literature on the need and challenges for women as board directors on corporate boards with special reference to India. 2) We applied citation, co-citation, three field analysis, text analysis to understand the richness of the available literature 3) the study aims to find out the need for women directors on corporate board using bibliometric using the combined database of Scopus and WOS. 4) the study used Bradfords law to understand the core publications globally in women directors on corporate boards. This paper makes a significant contribution in highlighting the need for women on corporate board in Indian context. India’s specific legislation mandating women directors’ contrasts with voluntary measures in some Western countries. Cultural norms and family structures in India influence women’s experiences in leadership positions. Moreover, resource availability and industry variations impact research rigor and methodologies.

2. Research Questions

Considering the gap identified in the previous paragraphs, the objective of this study is therefore to evaluate research on women as board directors. It aims to identify the global evolution of studies in women as board directors.

The scholars aim to address the following research questions:

1. What are the recent trends in the publication of women as board of directors in terms of time, authors, journals, associated countries, and institutions?
2. What are the most impactful research themes and publications in this field?
3. What are the key research streams and concepts that have been explored about women directors globally?
4. What is the need of women directors on corporate boards in India?

The remaining paper is sequenced as: section 2 describes the data search and data extraction methods, while section 3 presents the results of the systematic review, section 4 represents the citation network, the analysis of keywords is covered in section 5. Section 6 covers the co-citation analysis, while section 7 delineates the needs of women directors on corporate boards in India and section 9 discusses the future research directions. Finally, the study is concluded in section 10.

3. Literature Review

With 75 years of Independence of India, a country with 123 billion population, country considered to be having the potential to be one of the largest economies in the coming years. Deloitte insights projects INDIA to grow by 7.1% to 7.6% in FY22–23 and 6%–6.7% in FY23–24 (Source: <https://www2.deloitte.com/us/en/insights/economy/asia-pacific/india-economic-outlook.html>). On the other hand, the female workforce participation has increased as per the all-India female labour force participation rate (LFPR) in usual status has increased by only 2.3% in 2021 to 25.1% as compared to 22.8% a year ago, shows the Periodic Labour Force Survey (PLFS) annual report for July 2020-June 2021 released in June 2022. However, according to RBI report the current women workforce participation is lowest in the world, lower than even our countries like Bangladesh (35%) and Sri Lanka (31%). It is lower than India’s own record of over 26% in 2005.

As we go up the ladder, the numbers are depleting with a silver lining in the cloud, is that women on boards have increased from 5% to 11%. To quote the Catalyst report of November 2021, globally women representation on boards is increasing but at a slower pace. In India, The Women Directorship increased marginally from 15.9% in 2019 to 16.6% in 2020. The Companies Act of 2013, did help in improving the numbers but a lot needs to be done still, especially in the space of mindset and culture change at all levels.

Creating role models at the leadership levels not only results in higher financial returns, it allows organization to fill the talent shortage or attract most qualified people at leadership level (Liu, 2013; Seo et al., 2017a; Singh & Vinnicombe, 2004a). For women to be available at the leadership level, there needs to be a pipeline right from the entry level. The positions at the top do narrow down but the relative availability of women at the top is a concern. It is established through various studies that organizational structures make it difficult for women to see career advancement (Bhattacharya et al., 2018)

According to the Catalyst report of 2019, globally there is a slight increase in the share of women in senior management at 31%, which is highest ever recorded. 90% of the companies listed worldwide have at least one woman in a senior management role as of 2021. Also, the roles of women have been shifting from just being HR directors to CEO, CFO and CIO.

A 2020 analysis by Mercer of over 1,100 organizations across the world found a leaky pipeline for women in leadership: Executives: 23%, Senior managers: 29%, Managers: 37%, Professionals: 42% and Support staff: 47% (Catalyst, 2019).

Need for women on board today is argued more on business case rather than on fairness and equity (Torchia et al., 2011b; Wiley & Monllor-Tormos, 2018) and pushed by various stakeholders like government, organizations, media, investors and society in general (Isidro & Sobral, 2015c). As per (Joecks et al., 2019) women directors widen the board perspective, they make discussion object and act as mediators. Critical mass of three improves the impact (Joecks et al., 2019). Resource dependency theory, institutional theory and social network theory suggests that large organisations especially those who are dependent on female employees, might benefit because of women representation on boards (Hillman et al., 2007).

Moreover, current academic literature on women in western and developed countries (Assenga et al., 2018; Ghosh, 2017). There is a need for research in Indian context and may be in the Asian context (Liu, 2013) due to differences in corporate governance structures and different cultures.

Large body of research till 2003 focused on gender diversity at the work group level rather than on board level (Hillman et al., 2007) establishing the fact that the study on women as board directors is a very nascent phenomenon and requires intense academic research. Despite large body of research on board structure, board composition, board size, directors voting issues, quota on board, board gender diversity (Wiley & Monllor-Tormos, 2018), influence of CEO, gender differences, impact on firm performance, role of board directors, critical mass (Campbell & Mínguez-Vera, 2008; Cook & Glass, 2015; Dowling & Aribi, 2013), impact on investors (Ahmadi et al., 2018; Assenga et al., 2018; Bernardi et al., 2005; Dowling & Aribi, 2013; Ghosh, 2017; Haldar et al., 2015; Jacqueline Garner, 2012; Ku Ismail & Abdul Manaf, 2016; Nielsen & Huse, 2010; Terjesen & Sealy, 2016; Torchia et al., 2011a; Trinarningsih et al., 2021) there is yet no conclusive picture of women's presence and impact on firm performance or equity (Hutchinson et al., 2015; Isidro & Sobral, 2015c; Joecks et al., 2019; Kyaw et al., 2015; Pathan & Faff, 2013; Samara et al., 2019; Sanan, 2016; Sila et al., 2016; Torchia et al., 2018; Vieira, 2018; Vu et al., 2018; Wiley & Monllor-Tormos, 2018; Ye, 2014). There are insights confirming the links between gender diversity and board quality, shareholder rights, disclosures and stock price informativeness, transparency impacting stock informativeness (Gul et al., 2011; Hillman et al., 2007)

Diversity on board facilitates the oversight function of aboard providing conflict and breadth of perspectives. Continuing to rely on only male members leads to mediocrity on boards (Erhard et al., 2003). Outsiders on the board are more focused on profit goals (as per agency theory), hence they would encourage focus on quality products and services while also being sensitive to socially acceptable and diversity hiring practices (Johnson & Greening, 2014).

4. Methodology

4.1 Sourcing Data

Data sourcing is one of the key elements in bibliometric analysis (Xu et al., 2020). We used Web of Science (WOS) and Scopus as both the databases put together would cover most of the universe on the subject. (Ortega-Fraile et al., 2018). We decided selection criteria for terms, years, target indexes, and specified databases before retrieving and cleaning the information.

The WOS core collection, is the frequently used database for bibliometric studies (Fabregat-Aibar et al., 2019; Kent Baker et al., 2020). On the other hand, Scopus is a broader database in comparison to WoS (Khatib et al., 2021; Trinarningsih et al., 2021). Since the coverage is exhaustive in Scopus it allows mapping smaller research fields that are insufficiently covered by the former (Fabregat-Aibar et al., 2019).

The year 1965 was established as a starting point, and the search was continued until June 2022, two months before the period in which this research design was being conceptualised (August – October 2022).

In the title, abstracts and keywords of the corpus articles were filtered out which were unrelated, had blank extracts, paper had no relations to research topic or question. We got 836 papers which were not relevant of which 74 had blank abstract.

4.2 Data Loading and Converting

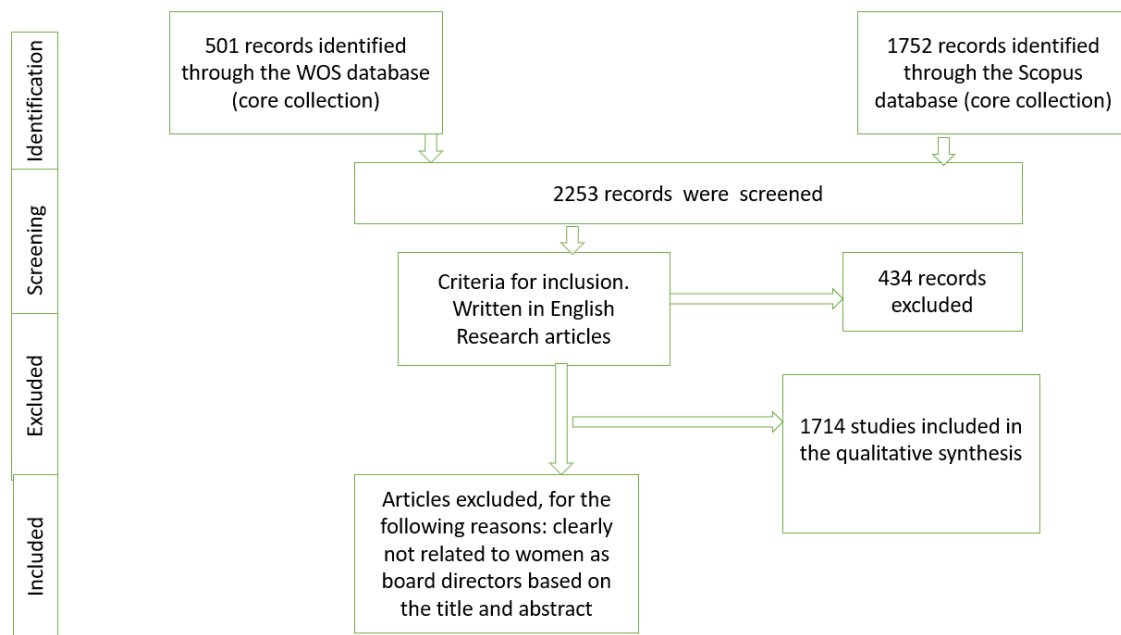


Figure 1: Steps to systematize the information (PRISMA). Adapted from (Fabregat-Aibar et al., 2019)

During the identification phase, keywords are chosen which help achieve our objectives. The keywords were shortlisted from the core references in the field and these keywords can appear in the title, author keywords or abstract. (Fabregat-Aibar et al., 2019).

Since the construct of “Women as Board Director” is not specific in terms of sectoral focus, the empirical papers were conducted in multiple sectors and hence the data was shortlisted from all fields from both the databases (Anlesinya & Susomrith, 2020). The following search terms were used to identify papers.

TITLE-ABS-KEY ("woman" OR "women" OR "female" OR "gender diversity" AND "board of directors" OR "corporate governance" OR "independent director") AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "ch") OR LIMIT-TO (DOCTYPE , "re") OR LIMIT-TO (DOCTYPE , "bk")) AND (LIMIT-TO (LANGUAGE , "English"))

To the best of our knowledge, it is the first research to use combined data from WOS and Scopus using Rstudio – Biblioshiny for understanding the extant of research on “Women on Boards”. A very broad search showed Scopus had 1986 papers (as on 3rd September 2022) which were not conference proceedings or newspaper articles. While WOS was having 2568 papers which were from Social Science Index, Science Index, Arts and humanities and emerging science index.

A further refined search was conducted on 3rd October 2022. In this phase 501 documents were found in WOS and 1752 in Scopus. Many papers appear in both the databases, so after removing 432 duplicates, the total number of documents was 1714. With 200-page viewing, reading abstracts is easier in Scopus than in WOS, which has limit of 50 papers.

Inclusion: The focus was on articles, book chapters, book, and reviews in the search criteria. The search was carried out only in English language. During the search in Scopus and WOS, abstracts were manually screened to include papers which cover “Women as Board Directors”.

Exclusion: We excluded conference papers, conference proceedings, notes, erratum, irrelevant papers where it is difficult to establish the relationship with our research.

4.2 Data cleaning and organising

Data cleaning was done to remove duplication, misspelled elements, multiple versions of same publications, different spellings of same authors name, abbreviation forms, different book editions etc.

Next stage of data cleaning included capital letter standardization, checking authors initial, removing duplicities in cited references (Goyal & Kumar, 2021), data completion, etc.

We use the data and results obtained to perform bibliometric mapping using VOS viewer (Danvila-del-Valle et al., 2019) and Biblioshiny. The main advantage of these software is the easy visualization of the co-citation network(Khatib et al., 2021). VOSViewer software was used for citation analysis, key word occurrences, bibliographic coupling, cluster analysis and bibliometric map (Ciganovic et al., 2022) to build and visualize relationships graphically as well as to perform analyses based on the networks underlying the research on the topic (Bartolacci et al., 2020).

5. Data Analysis

Once the articles were obtained in the respective databases, it was necessary to be able to work with them. Hence, we used R studio to combine the outcomes of the databases into one csv file. The combined file has 1713 articles which is a result of 510 documents from WOS and 1752 documents from Scopus.

5.1 Data Interpretation

Summary of Information About data

The selected research papers covered the period from 1965 to 2022. The research includes 626 sources and 1713 documents sourced from WOS and Scopus. The average publication over this period has been 4.31 articles, which is a very low number indicating that the area of study is still nascent, globally. Average citations per document is 28.99 and average citation per year per document is 4 with 87905 references, indicating low level of research despite importance of women directors globally. The documents include 1560 peer reviewed articles, with 6 early access articles from WOS, 10 books, 74 book chapters, 61 review articles. The entire corpus had 1133 general key words and author keywords of 2624. Authors of single authored document are 237 and total authors contributing to the corpus are 3387 who have appeared 4587 times as single authors or co-authors in the corpus being studied. This can be viewed both ways, either there are large number of authors who have published not more than one article in this area and no follow up research or there is an increasing interest in multiple countries about the need for women on board positions and hence the research. The previous research on women on boards are based either on WOS or Scopus database, the combining of articles in R Studio using Biblioshiny has led to discovery of rare articles.

Growth in Academic Publications:

In 1979 Rowland & Schneiderman claimed that almost 40% of board positions of 17 hospitals is occupied by women(Rowland & Schneiderman, 1979)".

After this initial research, serious academic work was done post 2005. From 1979 till 1991 there was not a single publication on women as board of directors. Gender diversity on boards got prominence in academia since late 90s when Rogelberg and Rumery(1996), Burke(1997) and Elsass and Graves(1997) analysed the requirement of more women on corporate boards (Mumu et al., 2022). Ronald Burke made a significant contribution with 4 papers between 1992 to 1999 as a single author. Till then boards were considered as "ornaments on Christmas tree" (R. J. Burke, 1993) with little or no contribution to the organisation operations. The boards are expected to provide advice and counsel, legitimacy and access to resources/ channel to communication(Hillman et al., 2007). With the changing role of boards, the outlook towards women on boards, changed. There were more women as professionals or managing their own enterprises.

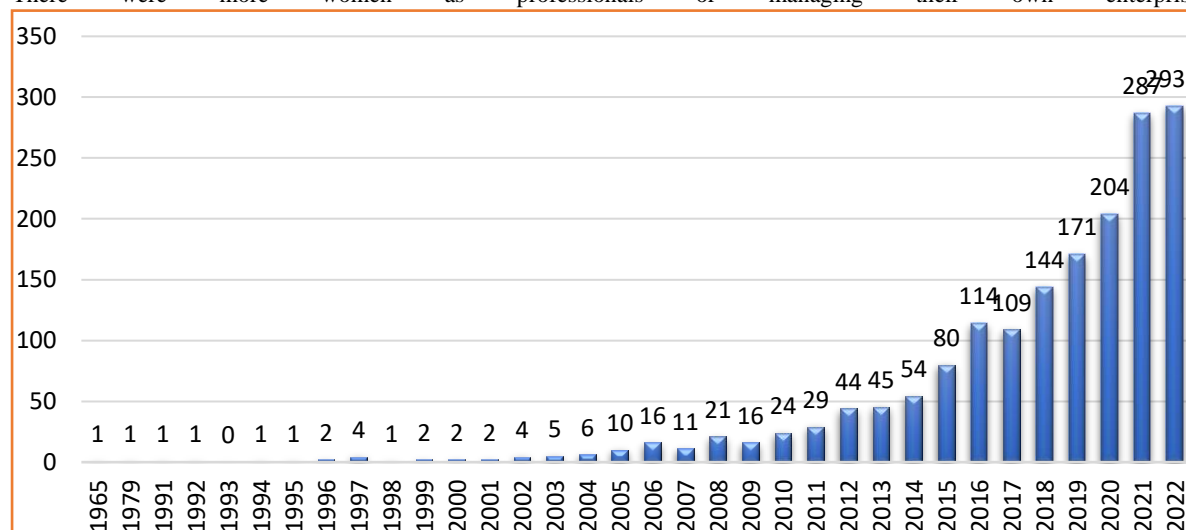


Figure 3: Chronological distribution of publication (1965 to 2022)

(Source: Authors own analysis using Microsoft Excel)

The rise of women at the leadership level and their visibility would have triggered research on women as directors. With countries like Norway, Denmark, Australia, France, Germany, India, etc implementing quota through legislation, there was further boost and attention to this area. It was only from 2004 that the papers published crossed double digit and since 2020 the number seem to be crossing 100 mark, with 2021 seeing about 142 papers published on the subject which is highest in the period approximately 40 years (4 decades). It is only in the last 25 years that this area became significant in the academic research.

Top Journals:

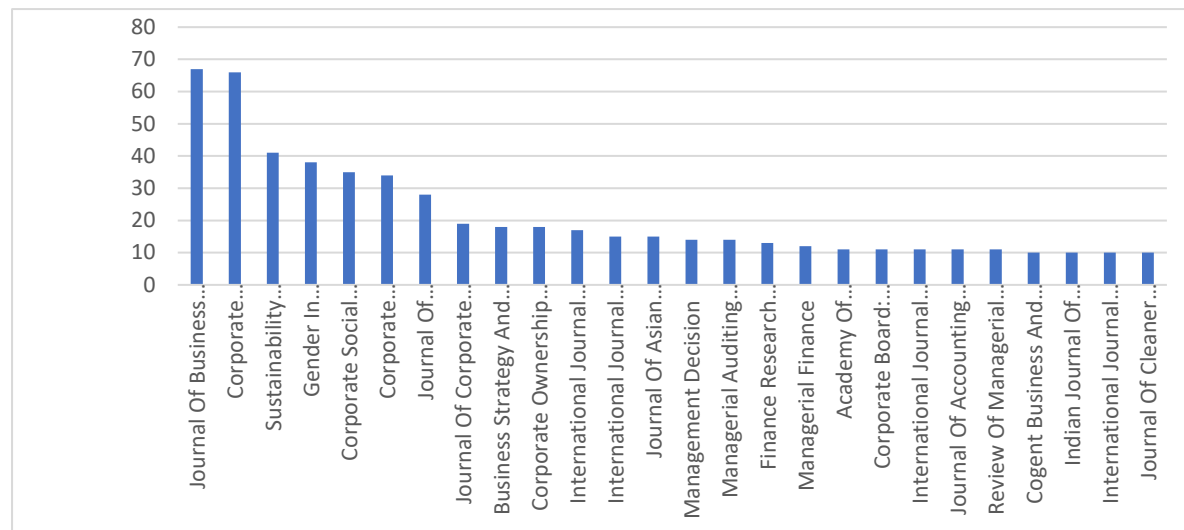


Figure 4: Top journals by publications

(Source: Authors own analysis using Microsoft Excel)

As per the figure above (Figure 3- Top journals by publication), the top three are Journal of business ethics, Corporate Governance (Bingley) and Sustainability (Switzerland). Journal of Business Ethics is the oldest journal with highest H index of 43 and has published since 67 research articles on women and related areas including board directorship. The next best journal in the field of research on “women as board of director” is Corporate Governance: An international Review. But the difference in H index is almost 50% lower between the two journals, showing the dearth of articles in leading journals. Journal of Corporate Finance is relatively new with lower H index but very high citations. There is only one specific journal on gender – Gender Management with 15 as H index and 601 citations started in 2008. Sustainability is the only journal from WOS which emerged in the top 10 journals in the combined database. Journals like Corporate Governance and Gender Management dealt with women directors as a business case and not a gender issue. Hence these three journals are torch bears of the need of women directors. But what is noticeable is that the no 1 journal in the areas has only 63 articles since 1991 (which is 33 years).

Top Authors

Table 1: Top 10 Authors – Citation, Total Link Strength

| S No | Document ID | Author | TCi | Rank on Tci | TLS | Rank on TLS | StYr | Tcyr | Citable year | Rank on Cityr | Journal |
|------|-------------|-------------|------|-------------|-----|-------------|------|-------|--------------|---------------|--------------------------------|
| 1 | 359 | R B Adams | 2111 | 1 | 270 | 1 | 2009 | 162.4 | 13 | 5 | Journal of Financial Economics |
| 2 | 1056 | A R Johnson | 995 | 2 | 43 | 9 | 1999 | 43.3 | 23 | 1 | Academy of Management Journal |
| 3 | 59 | K Campbell | 921 | 3 | 134 | 3 | 2008 | 65.8 | 14 | 4 | Journal of Business Ethics |
| 4 | 103 | N L Erhard | 886 | 4 | 6 | 10 | 2003 | 46.6 | 19 | 2 | Corporate Governance: An |

| | | | | | | | | | | | |
|----|------|-------------|-----|----|-----|---|------|------|----|----|---|
| | | | | | | | | | | | International Review |
| 5 | 494 | S Bear | 861 | 5 | 123 | 5 | 2010 | 71.8 | 12 | 8 | Journal of Business Ethics |
| 6 | 1129 | A D Carter | 817 | 6 | 134 | 4 | 2010 | 68.1 | 12 | 7 | Corporate Governance: An International Review |
| 7 | 791 | S Terjesen | 738 | 7 | 155 | 2 | 2009 | 56.8 | 13 | 6 | Corporate Governance: An International Review |
| 8 | 719 | A F Gul | 604 | 8 | 87 | 8 | 2011 | 54.9 | 11 | 10 | Journal of Accounting and Economics |
| 9 | 968 | M Torchia | 597 | 9 | 99 | 7 | 2011 | 54.3 | 11 | 9 | Journal of Business Ethics |
| 10 | 128 | A J Hillman | 570 | 10 | 106 | 6 | 2007 | 38.0 | 15 | 3 | Academy of Management Journal |

(Source : Authors own analysis using the Scopus and WoS database)

There are 237 single authors in the sample of articles analysed. Table 1 shows the top 10 authors who were the most prolific. To classify and understand their importance, we ranked them based on their h-index for each author as well as the total number of citations. We used both ranks since they give different perspectives of their contributions and may indicate collaborations in their production. When considering the relevance in terms of the h-index, leading the ranking were authors such as R B Adams, A R Johnson and K Campbell

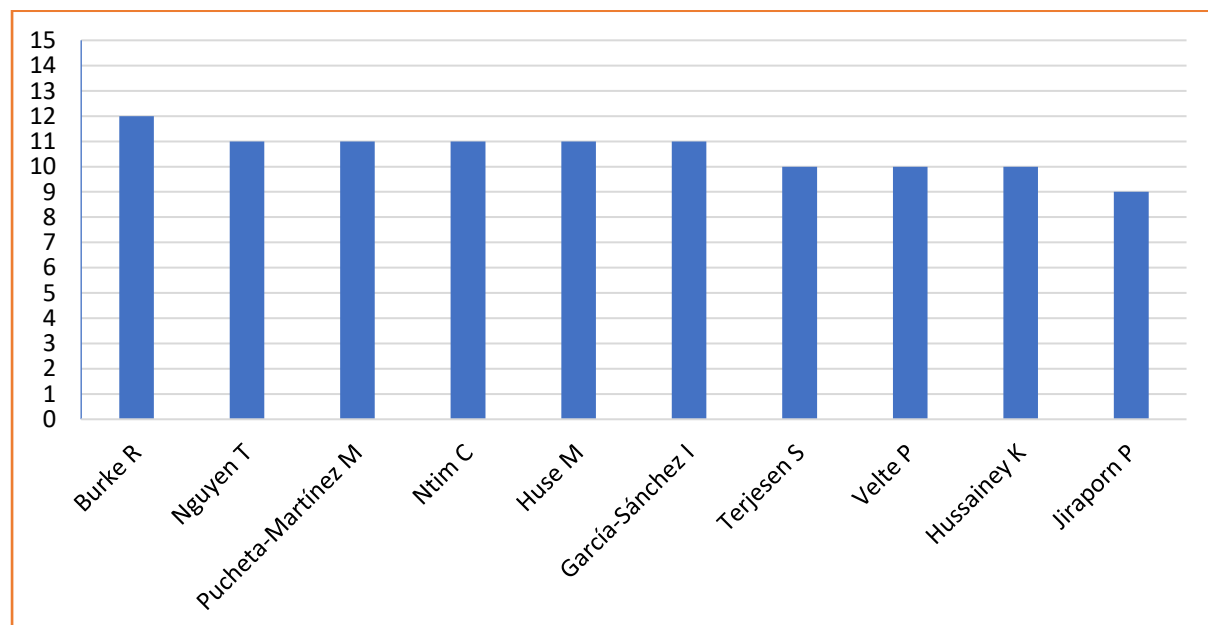


Figure 5: Top 10 authors' productivity

(Source: Authors own analysis using the Scopus and WoS database)

Ronald Burke, wrote about Women on boards as early as in 1980s. R.Burke is the top writer with 12 articles on the subjects. Some of the highly cited articles covered areas of selection, acceptance and benefits of women on board (R. J. Burke, 1997a), justification for women being on board(R. J. Burke, 1997b, 2003), explored the views of CEO(R. J. Burke, 1994).

On an average about 10 to 15% of the authors have written at least one to five paper each on the topic of “Women on Boards”. About 5% to 9% have written 6 to 10 papers. S. There is not a single Indian author in top 10 authors. These number indicate the need for more research in the area and lack of academic attention till about 2005 after which the number of publications has been increasing. With about 231 papers published in 2022 already. Is it possible that pandemic highlighted the role of women directors on board or brought forward their contribution on board or leadership position, resulting in

increased academic research. The scholar also wants to point out that their research is very western country and author focused. There is lack of representation from two of the largest economies viz India and China. Asian perspective is missing.

There are 2371 authors who have contributed at least one article as a single author or a co-author, which shows an increased interest of academicians in the recent years.

When we used the combined database of WoS and Scopus and analysed in Biblioshiny, it is R Burke who emerges as the most productive author who has been publishing articles since 1994 and last published article is in 2019. Followed by Gracia-Sanchez, who is active since 2010 to 2022.

Citation analysis:

Citation analysis considers that authors cite documents they consider impactful and relevant to their research (Khanra et al., 2021). Accordingly, how often these articles are cited may be linked to the impact create on the topic. Similarity between documents, authors and journals is used to count citations (Aria & Cuccurullo, 2017). Citation analysis can be segregated into bibliographic coupling and co-citation analysis. (Aria & Cuccurullo, 2017).

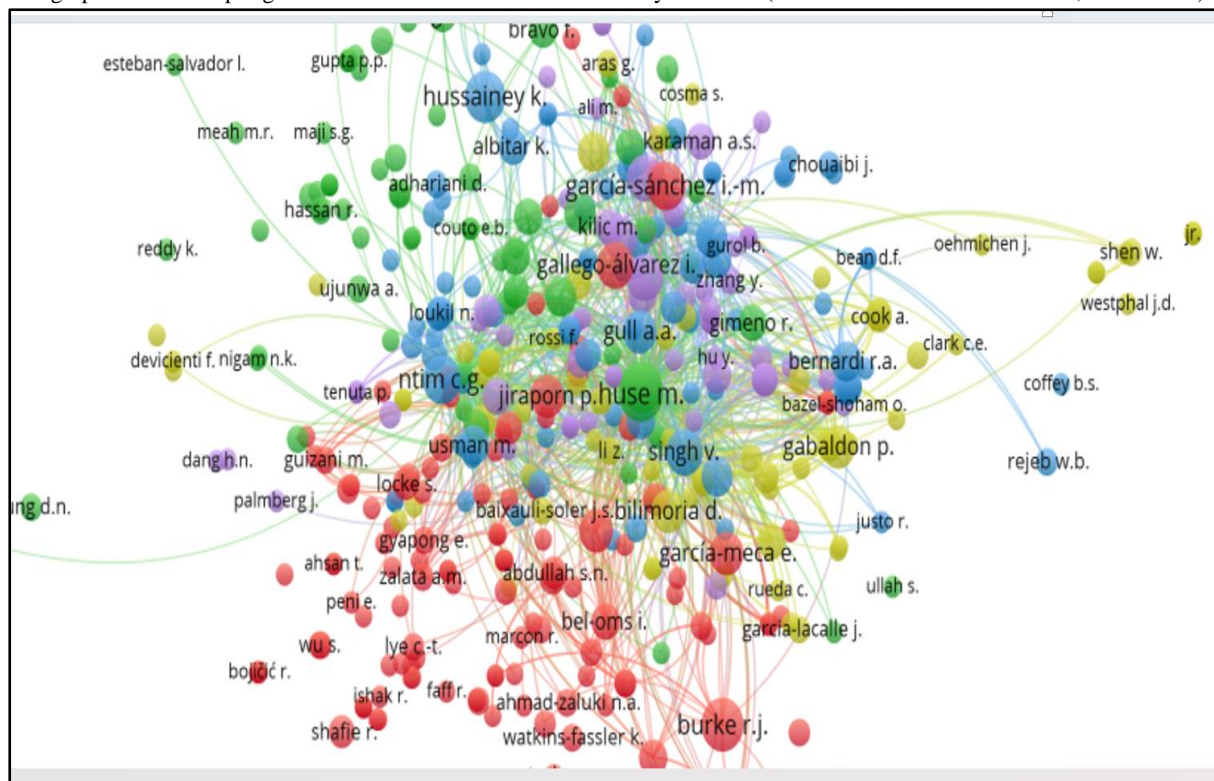


Figure 6: Citation Analysis – Author

(Source : Authors own analysis using Scopus Database)

The citation analysis by author (Figure 5) shows that R J Burke (red cluster) and M Huse (green cluster) and Val Singh (Bluecluster) are some of the influential authors in this area in the Scopus database

While the combined database of WOS and Scopus show top author by number of citations is R B Adams who has total citations of 2111, total link strength of 270. Her articles in Journal of Financial Times was published in 2008 titled “Women in the boardroom and their impact on governance and performance”. When this article was published women on board in US was 14% and the percentage of directors in Australia, Canada, Japan, and Europe is estimated to be 8.7%, 10.6%, 0.4%, and 8.0% respectively ((Adams & Ferreira, 2009).

Citation Analysis – Countries

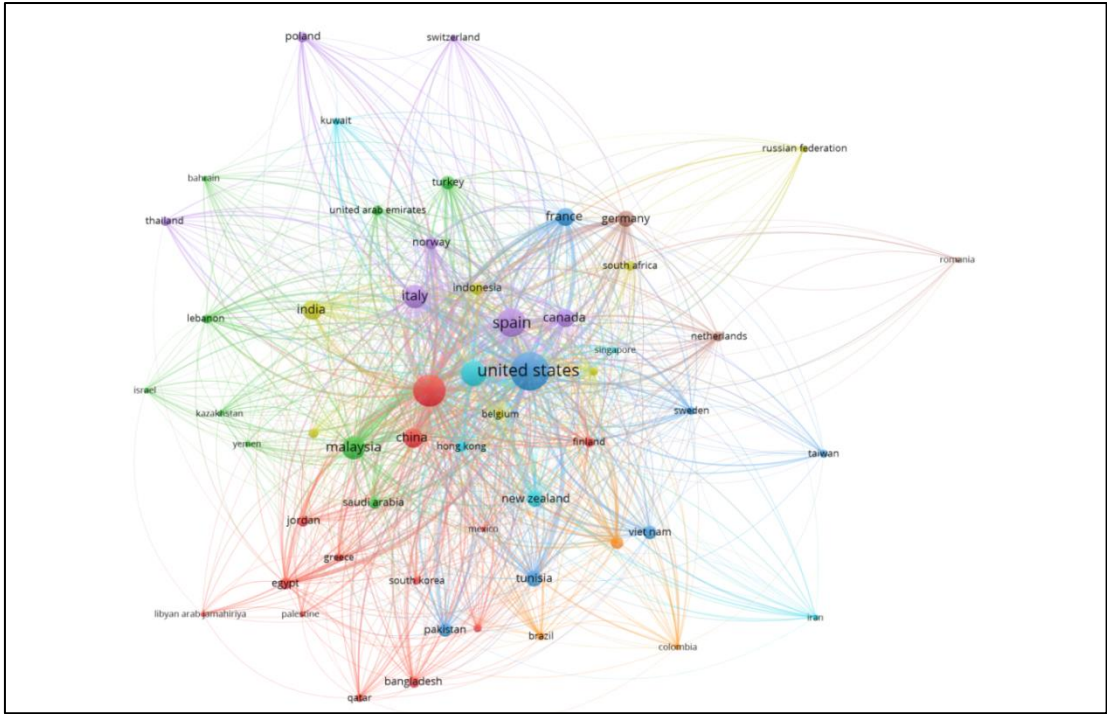


Figure 7: Citation Analysis – Countries

(Source: Authors own analysis using Scopus database)

The highest number of authors on the topic of “Women on boards” are from USA with 176 corresponding authors, followed by Spain with 122 authors. As of 2022, India has 55 authors this finding may indicate that “Women on boards” generally receives more attention from organisations in some countries than in others (Anlesinya & Susomrith, 2020). After US, Spain and UK who are naturally leading countries, it is Malaysian authors who are amongst top 5, China being 6th. This indicates that people or governments are studying this field to implement the initiative in their own countries or the awareness in academic community in these countries is much more than countries like Denmark, Poland, Sweden, Singapore etc. Even in a supposedly closed economy like China there is a significantly large number of authors. Either the authors are based in China or working in countries other than China but have natural citizenship of China. Also authors of a particular country need not study the companies and women directors of their own country. They could be involved in studying other countries or would be co-authoring the journal article.

Application of Bradford’s Law of Scattering

Two things get highlighted with the above data, that an institution publishing large number of research papers in a particular field is not necessarily high impact or the research area focused by them is very narrow, while institutions which may publish lesser article but have high impact in the research area.

Hence decided to use Bradfords law of scattering to understand the journals which focus on the research. According to Bradford, the zones, indicated will form an approximately geometric series in the form 1: n: n². Bradford wrote “the numbers of periodicals in the nucleus and succeeding zones will be as 1, n, n²”l.

But it is identified that the relationship of each zone in the present study is 28:125:474. The ratio depicts that it does not fit into the Bradford’s law of distribution. Since according to the Bradford’s law, the distribution should be 28:76:208 totalling to 313 articles. The margin of error is about 50% which is way too off the mark. It is, therefore, very clear that the percentage of error is extremely high and therefore, the data does not fits in Bradford’s law. We conclude that the articles in zone 1 journal on “Women on board or women as board of directors” is way too low. This topic needs more academic interest and deep dive than the current attention being given.

Table 3: Zone-wise distribution of articles

| Zone wise distribution | | | | | |
|------------------------|----|-----|----|-----|------------|
| Zone | TJ | TJ% | TA | TA% | Multiplier |

| | | | | | |
|--------|-----|-----|------|-----|-------------------|
| Zone 1 | 28 | 4% | 571 | 33% | |
| Zone 2 | 125 | 20% | 579 | 34% | 4.32 |
| Zone 3 | 474 | 76% | 563 | 33% | 1.13 |
| | 627 | 100 | 1713 | | 2.731(Mean value |

Table 3 represents that the distribution of scholarly journals and contribution of articles have classified into three zones. The results show that the distributions of core journals were published by a few numbers of journals. It finds here from the analysis, 28 refer to the number of journals in the Nucleus and the mean Bradford multiplier is 2.371.

Three-fields Plot

Figure 1. Countries with more than two papers based on the corresponding author's address. (MCP: Multiple-country publication; SCP: Single-country publication)

A three-field Plot (Sankey diagram) of Country, Keyword, and Year of publication of the cited references was created to depict the proportion of research topics for each country and the recency of the papers that they cited

A three-field Plot (Sankey diagram) of Country, Keyword, and Year of publication of the cited references was created to depict the proportion of research topics for each country and the recency of the papers that they cited

A three-field Plot (Sankey diagram) of Author, keyword and journals was created to depict the proportion of research conducted by each author on the keywords and the journals they focused on. The intention was to identify the journals where the influential authors publish their articles especially on women directors. The three-field plot also known as Sankey diagram helps the research scholar to decide on the journals to refer and publish their research work. In the academic world today, predatory, or fake journals are so large, that it is important to identify the good journals for quality academic work.

The three-field plot was arrived at selecting.

- Middle field as keywords – 20 words
- Left field as authors – 20 authors.
- Right field as source – 20 journals

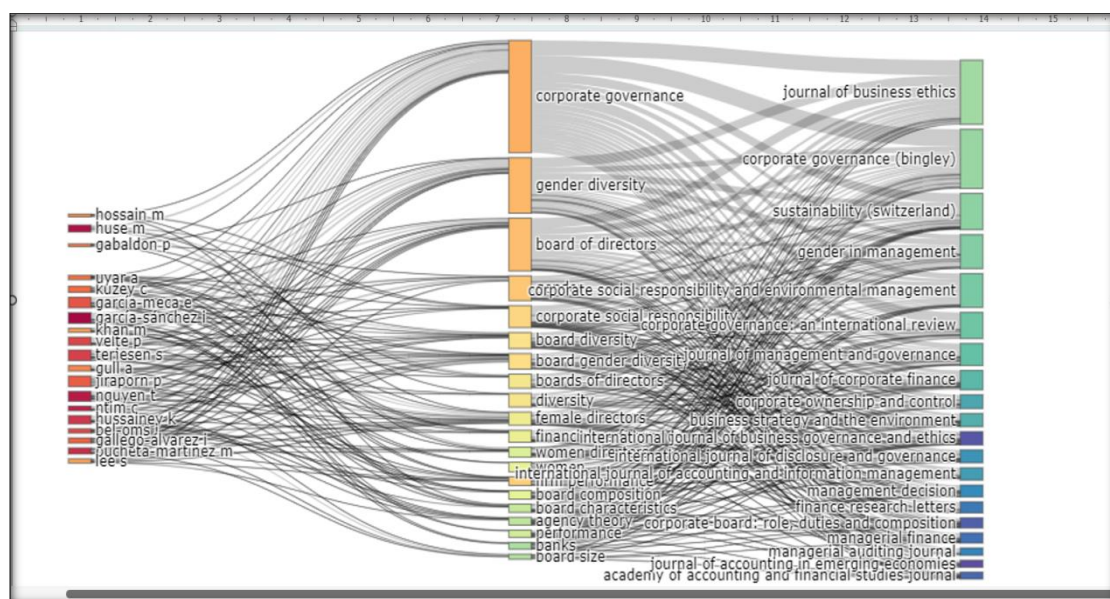


Figure 8: Three Field Plot

(Source: Authors own analysis using Scopus and WoS database in Biblioshiny)

The analysis established that which keyword in “women directors” “research are used most frequently by different authors and journals. The study of the top keywords, authors and sources indicates that the key words are - corporate governance, **gender diversity**, corporate social responsibility, board of directors, **gender**, **board diversity**, **board gender diversity**, diversity, **female directors**, financial performance, women **directors**, board composition. The key authors here were Hussainey, Velte, Graciasanches, Trejesen, Graciameca etc are some of the authors who published in sources such as Journal of business ethics, Corporate Governance (Bingley) and Sustainability. The first two are in Scopus database and last one is in WOS. Gender diversity is the second largest focus area in the corpus of database of 1714 documents. Of the 12 keywords which had significant contributions, there were 6 which talk about women or gender, rest are about governance and board.

Journals which are influential are focused more on the technicalities like corporate governance while it is the lower in the rung journals which are publishing papers with focus on “Women directors”. There are only 11 articles which are written with a pure focus on Women directors, but these are in almost all journals and almost all countries selected in the diagram. Although research on gender diversity is large, the focus on women directors, their personality, leadership qualities, conclusive research on their contribution to corporate boards is very narrow.

Text Analysis: Abstract and Title

Thematic text analysis becomes especially worthwhile when used to predict outcomes and make nonobvious but valid inferences. Text analysis can later be used for analysing the emerging themes in the research community. The key words were taken from abstract and title. Binary counting method was used. Out of 17768 words 732 words met the threshold. Minimum occurrence of the term set to 10. Then the relevance score was calculated where in 439 terms were found relevant. We get 5 clusters divided into two prominent groups- blue and purple and some green and second one being green, red and yellow. With resolution set to 5 and minimum cluster size set to 50 to get a clear network map, we get 5 cluster colours – red, blue, green, yellow, purple. The purple and blue are interconnected focusing on the corporate governance issues. While the red, yellow and green are related to women directors. The aspects of women directors used as gender quota, representation, process, position in board room being the prominent one. It is the red cluster which crosses over to show connection of women on board with CSR and compliance. This could mean that Women directors majorly focus on CSR activities and these positions are filled due to compliance reasons as part of corporate governance process.

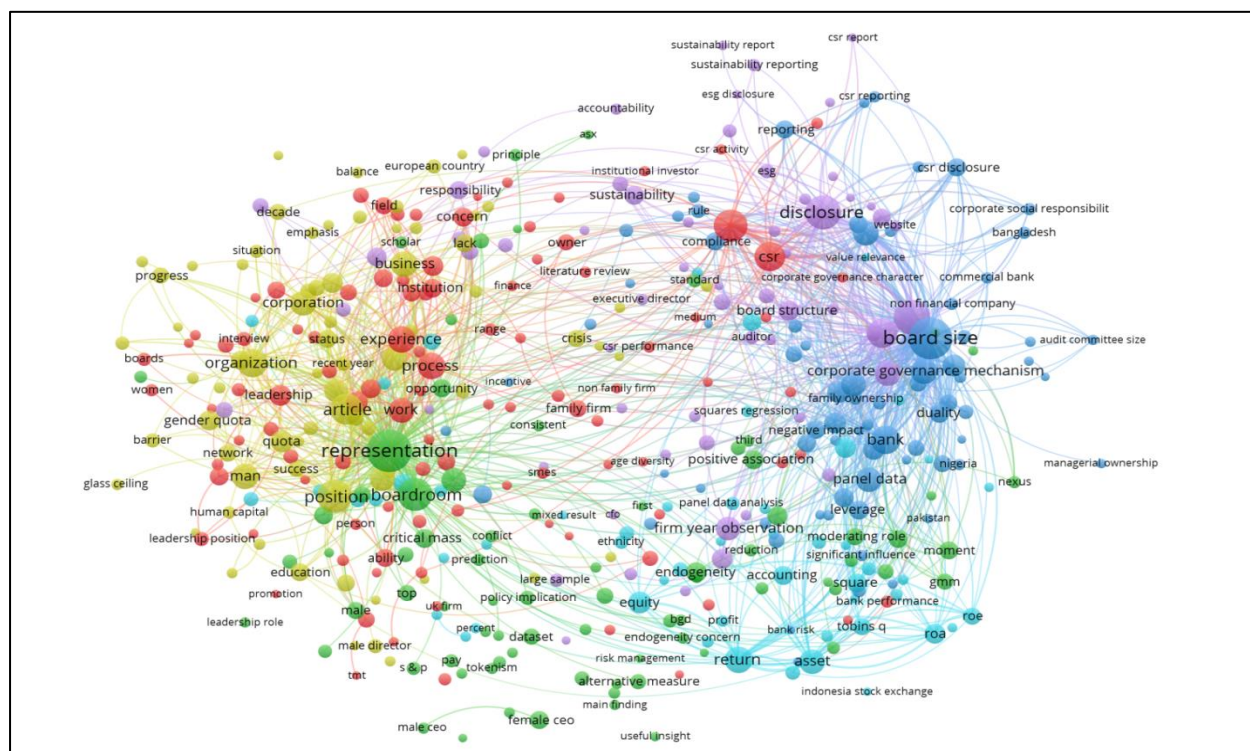


Figure 10: Text analysis using title and abstract

(Source: Authors' own analysis using Scopus database using VoSviewer software)

6. Conclusion

Academic research on women as board directors is very nascent. It is noticeable, that growth in the academic research with respect to Women on Boards had seen almost a 40% growth in the period 2004 to 2010 and then it almost halved in the next decade. But the two years of 2021-2022 has seen a 15% growth, which is very significant considering the short period of two years which was dominated by pandemic and its adverse effects. Was women's contribution on boards noticeable during this period? Moreover, if globally the average publication has been 4.31 article, then it is an indication of low level of focus. Since only 5% of women occupy leadership positions, academic research needs a push to improve women in pipeline.

In this paper, the database of WOS and Scopus was combined to provide an outline of the most productive and influential authors, sources, countries, and institutions. The findings reveal that focusing on one database does results in missing out some critical publications. In the combined database it is R B Adams emerges as top author with 2111 total citations for her articles while Ronal Buke with 11 articles emerges as top author in Scopus database along. There are single authors with one research paper to their credit but from multiple countries, which indicates the growing global interest and awareness about the need for women on board position.

Journal of Business Ethics is the top journal with concentration of highly cited articles. Journal of Business Ethics is the top journal with 67 articles with an impact factor of 6.137. 52% of the journals have published 1 to 5 papers which amount to 565 journals with 894 articles. While there are only 2 journals namely Journal of Business ethics and Corporate Governance (Bingley) put together have published more than 130 articles. This shows the influence and focus of these two leading journals in "Women Board Directors".

Leading countries in terms of research publications is USA and UK although leading authors are from all over the world. Probably, academic institutions and authors in US and UK have better access to leading publishers than in other parts of the world. The growth of research on women directors in China and Malaysia is a surprise find. This also indicates the gradual shift of focus to include Asian countries and context. 55 countries are actively conducting research in this space indicating an increased awareness and importance of women directors. Despite the great value of the results obtained in this study, the main limitation was that the combined data of WOS and Scopus combined could not be analysed on either VOSViewer or Biblioshiny. A lot of graphs and analysis was conducted using Microsoft Excel. Future line of research should focus on emerging authors and emerging countries like India.

References:

- [1] Abad, D., Lucas- Perez, M. E., Vera, A. M., & Yague Jose. (2014). Does gender diversity on corporate boards reduce information asymmetry in equity markets. *BRQ Business Research Quarterly*, 17(The Influence of culture on the relationship between the entrepreneur's social identity and decision-making: Effectual and causal logic), 69–76. <http://creativecommons.org/licenses/by-nc-nd/4.0>
- [2] Adams, R. B. (2016). Women on boards : The superheroes of tomorrow ? ☆ Worldwide Board Gender Diversity Policies as of 2015. 27, 371–386.
- [3] Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291–309. <https://doi.org/10.1016/j.jfineco.2008.10.007>
- [4] Ahmadi, A., Nakaa, N., & Bouri, A. (2018). Chief Executive Officer attributes, board structures, gender diversity and firm performance among French CAC 40 listed firms. *Research in International Business and Finance*, 44(July), 218–226. <https://doi.org/10.1016/j.ribaf.2017.07.083>
- [5] Anlesinya, A., & Susomrith, P. (2020). Sustainable human resource management: a systematic review of a developing field. *Journal of Global Responsibility*, 11(3), 295–324. <https://doi.org/10.1108/JGR-04-2019-0038>
- [6] Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/10.1016/j.joi.2017.08.007>
- [7] Assenga, M. P., Aly, D., & Hussainey, K. (2018). The impact of board characteristics on the financial performance of Tanzanian firms. *Corporate Governance (Bingley)*, 18(6), 1089–1106. <https://doi.org/10.1108/CG-09-2016-0174>
- [8] Bartolacci, F., Caputo, A., & Soverchia, M. (2020). Sustainability and financial performance of small and medium sized enterprises: A bibliometric and systematic literature review. *Business Strategy and the Environment*, 29(3), 1297–1309. <https://doi.org/10.1002/bse.2434>
- [9] Bernardi, R. A., Bean, D. F., & Weippert, K. M. (2005). Minority membership on boards of directors: The case for requiring pictures of boards in annual reports. *Critical Perspectives on Accounting*, 16(8), 1019–1033. <https://doi.org/10.1016/j.cpa.2004.02.009>
- [10] Bhattacharya, S., Mohapatra, S., & Bhattacharya, S. (2018). Women advancing to leadership positions: A qualitative study of women leaders in IT and ITES sector in India. *South Asian Journal of Human Resources Management*, 5(2), 150–172. <https://doi.org/10.1177/2322093718782756>

- [11] Burke, R. J. (1993). Women on Corporate Boards of Directors. *Equal Opportunities International*, 12(6), 5–13. <https://doi.org/10.1108/eb010613>
- [12] Burke, R. J. (1994). Women on Corporate Boards of Directors: Views of Canadian Chief Executive Officers. *Women in Management Review*, 9(5), 3–10. <https://doi.org/10.1108/09649429410066974>
- [13] Burke, R. J. (1997a). Women Directors: Selection, acceptance and benefits of board membership. *Corporate Governance: An International Review*, 5(3), 118–125. <https://doi.org/10.1111/1467-8683.00052>
- [14] Burke, R. J. (1997b). Women on corporate boards of directors: A needed resource. *Journal of Business Ethics*, 16(9), 909–915. <https://doi.org/10.1023/A:1017987220508>
- [15] Burke, R. J. (2003). Women on corporate boards of directors: The timing is right. *Women in Management Review*, 18(7), 346–348. <https://doi.org/10.1108/09649420310498966>
- [16] Burke, R., & Vinnicombe, S. (2005). Guest editorial Advancing women ' s careers. *Career Development International*, 10(3), 165–167.
- [17] Campbell, K., & Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of Business Ethics*, 83(3), 435–451. <https://doi.org/10.1007/s10551-007-9630-y>
- [18] Catalyst. (2019). Catalyst Report_July2019.
- [19] Ciganovic, Z., Sharma, K. K., Sciences, Y., & Sciences, Y. (2022). Employee Locus of Control: A Bibliometric Analysis and Visualization of the Scientific Landscape. VI(2).
- [20] Cook, A., & Glass, C. (2015). Diversity begets diversity? The effects of board composition on the appointment and success of women CEOs. *Social Science Research*, 53(Supplement C), 137–147. <https://doi.org/https://doi.org/10.1016/j.ssresearch.2015.05.009>
- [21] Dal Magro, C. B., & Klann, R. C. (2021). Political and financial background in board interlocking and earnings management in Brazil. *RAUSP Management Journal*, 56(4), 444–464. <https://doi.org/10.1108/RAUSP-10-2020-0245>
- [22] Danvila-del-Valle, I., Estévez-Mendoza, C., & Lara, F. J. (2019). Human resources training: A bibliometric analysis. *Journal of Business Research*, 101(June 2018), 627–636. <https://doi.org/10.1016/j.jbusres.2019.02.026>
- [23] Dowling, M., & Aribi, Z. A. (2013). Female directors and UK company acquisitiveness. *International Review of Financial Analysis*, 29, 79–86. <https://doi.org/10.1016/j.irfa.2013.04.004>
- [24] Erhard, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate Governance: An International Review*, 11(2), 102–111. <https://doi.org/10.1111/1467-8683.00011>
- [25] Estélyi, K. S., & Nisar, T. M. (2016). Diverse boards: Why do firms get foreign nationals on their boards? *Journal of Corporate Finance*, 39, 174–192. <https://doi.org/10.1016/j.jcorpfin.2016.02.006>
- [26] Fabregat-Aibar, L., Barberà-Mariné, M. G., Terceño, A., & Pié, L. (2019). A bibliometric and visualization analysis of socially responsible funds. *Sustainability (Switzerland)*, 11(9). <https://doi.org/10.3390/su11092526>
- [27] Ghosh, S. (2017). Why is it a man's world, after all? Women on bank boards in India. *Economic Systems*, 41(1), 109–121. <https://doi.org/10.1016/j.ecosys.2016.05.007>
- [28] Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 45(1), 80–105. <https://doi.org/10.1111/ijcs.12605>
- [29] Gul, F. A., Srinidhi, B., & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices? *Journal of Accounting and Economics*, 51(3), 314–338. <https://doi.org/10.1016/j.jacceco.2011.01.005>
- [30] Gulamhussen, M. A., & Santa, S. F. (2015). Female directors in bank boardrooms and their influence on performance and risk-taking. *Global Finance Journal*, 28(January 2010), 10–23. <https://doi.org/10.1016/j.gfj.2015.11.002>
- [31] Haldar, A., Shah, R., & Nageswara Rao, S. V.D. (2015). Gender diversity in large listed Indian companies. *Corporate Ownership and Control*, 12(3CONT5), 573–580. <https://doi.org/10.22495/cocv12i3c5p8>
- [32] Hillman, A. J., Shropshire, C., & Cannella, A. A. (2007). Organizational predictors of women on corporate boards. *Academy of Management Journal*, 50(4), 941–952. <https://doi.org/10.5465/AMJ.2007.26279222>
- [33] Hurn, B. J. (2012). Removing the boardroom glass ceiling. *Industrial and Commercial Training*, 44(3), 126–131. <https://doi.org/10.1108/00197851211216727>
- [34] Hutchinson, M., Mack, J., & Plastow, K. (2015). Who selects the “right” directors? An examination of the association between board selection, gender diversity and outcomes. *Accounting and Finance*. <https://doi.org/10.1111/acf.12082>
- [35] Isidro, H., & Sobral, M. (2015a). The Effects of Women on Corporate Boards on Firm Value, Financial Performance, and Ethical and Social Compliance. *Journal of Business Ethics*, 132(1). <https://doi.org/10.1007/s10551-014-2302-9>
- [36] Isidro, H., & Sobral, M. (2015b). The Effects of Women on Corporate Boards on Firm Value, Financial Performance, and Ethical and Social Compliance. *Journal of Business Ethics*, 132(1), 1–19. <https://doi.org/10.1007/s10551-014-2302-9>
- [37] Isidro, H., & Sobral, M. (2015c). The Effects of Women on Corporate Boards on Firm Value, Financial Performance, and Ethical and Social Compliance. *Journal of Business Ethics*, 132(1), 1–19. <https://doi.org/10.1007/s10551-014-2302-9>

- [38] Jacqueline Garner, T. W. Y. K. (2012). Boards of Directors: A literature review. *Managerial Finance*. <https://doi.org/10.4324/9780080938196>
- [39] Joecks, J., Pull, K., & Scharfenkamp, K. (2019). Perceived roles of women directors on supervisory boards: Insights from a qualitative study. *German Journal of Human Resource Management*, 33(1), 5–31. <https://doi.org/10.1177/2397002218783925>
- [40] Johnson, R. A., & Greening, D. W. (2014). The Effects of Corporate Governance and Institutional Ownership Types on Corporate Social Performance. *Academy of Management Journal*, 42(5), 564–576.
- [41] Kent Baker, H., Pandey, N., Kumar, S., & Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. *Journal of Business Research*, 108(November 2019), 232–246. <https://doi.org/10.1016/j.jbusres.2019.11.025>
- [42] Khanra, S., Dhir, A., Parida, V., & Kohtamäki, M. (2021). Servitization research: A review and bibliometric analysis of past achievements and future promises. *Journal of Business Research*, 131, 151–166. <https://doi.org/10.1016/j.jbusres.2021.03.056>
- [43] Khatib, S. F. A., Abdullah, D. F., Elamer, A., Yahaya, I. S., & Owusu, A. (2021). Global trends in board diversity research: a bibliometric view. *Meditari Accountancy Research*, November. <https://doi.org/10.1108/MEDAR-02-2021-1194>
- [44] Knippen, J. M., Palar, J., & Gentry, R. J. (2018). Breaking the mold: An examination of board discretion in female CEO appointments. *Journal of Business Research*, 84(November 2016), 11–23. <https://doi.org/10.1016/j.jbusres.2017.10.057>
- [45] Ku Ismail, K. N. I., & Abdul Manaf, K. B. (2016). Market reactions to the appointment of women to the boards of Malaysian firms. *Journal of Multinational Financial Management*, 36(June 2011), 75–88. <https://doi.org/10.1016/j.mulfin.2016.04.004>
- [46] Kulich, C., Lorenzi-Cioldi, F., Iacoviello, V., Faniko, K., & Ryan, M. K. (2015). Signaling change during a crisis: Refining conditions for the glass cliff. *Journal of Experimental Social Psychology*, 61, 96–103. <https://doi.org/10.1016/j.jesp.2015.07.002>
- [47] Kyaw, K., Olugbode, M., & Petracci, B. (2015). Does gender diverse board mean less earnings management? *Finance Research Letters*, 14, 135–141. <https://doi.org/10.1016/j.frl.2015.05.006>
- [48] Liao, L., Luo, L., & Tang, Q. (2015). Gender diversity , board independence , environmental committee and greenhouse gas disclosure. *The British Accounting Review*, 47, 409–424.
- [49] Liu, S. (2013). A few good women at the top: The China case. *Business Horizons*, 56(4), 483–490. <https://doi.org/10.1016/j.bushor.2013.04.002>
- [50] Mumu, J. R., Saona, P., Haque, M. S., & Azad, M. A. K. (2022). Gender diversity in corporate governance: a bibliometric analysis and research agenda. *Gender in Management*, 37(3), 328–343. <https://doi.org/10.1108/GM-02-2021-0029>
- [51] Ng, E. S., & Sears, G. J. (2017). The glass ceiling in context: the influence of CEO gender, recruitment practices and firm internationalisation on the representation of women in management. *Human Resource Management Journal*. <https://doi.org/10.1111/1748-8583.12135>
- [52] Nielsen, S., & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance*, 18(2), 136–148. <https://doi.org/10.1111/j.1467-8683.2010.00784.x>
- [53] Ortega-Fraile, F. J., Ríos-Martín, M. Á., & Ceballos-Hernandez, C. (2018). Tourism and mobile devices: provenance of academic research through a bibliometric study. *Journal of Tourism Analysis*, 25(1), 91–112. <https://doi.org/10.1108/JTA-02-2018-0008>
- [54] Pathan, S., & Faff, R. (2013). Does board structure in banks really affect their performance? *Journal of Banking and Finance*, 37(5), 1573–1589. <https://doi.org/10.1016/j.jbankfin.2012.12.016>
- [55] Rowland, B., & Schneiderman, L. J. (1979). Women in Alternative Health Care: Their Influence on Traditional Medicine. *JAMA: The Journal of the American Medical Association*, 241(7), 719–721. <https://doi.org/10.1001/jama.1979.03290330035022>
- [56] Samara, G., Jamali, D., & Lapeira, M. (2019). Why and how should SHE make her way into the family business boardroom? *Business Horizons*, 62(1), 105–115. <https://doi.org/10.1016/j.bushor.2018.09.001>
- [57] Sanan, N. K. (2016). Board gender diversity and firm performance: evidence from India. *Asian Journal of Business Ethics*, 5(1–2), 1–18. <https://doi.org/10.1007/s13520-016-0050-x>
- [58] Seo, G., Huang, W., & Han, S. H. C. (2017a). Conceptual Review of Underrepresentation of Women in Senior Leadership Positions From a Perspective of Gendered Social Status in the Workplace: Implication for HRD Research and Practice. *Human Resource Development Review*, 16(1). <https://doi.org/10.1177/1534484317690063>
- [59] Seo, G., Huang, W., & Han, S. H. C. (2017b). Conceptual Review of Underrepresentation of Women in Senior Leadership Positions From a Perspective of Gendered Social Status in the Workplace: Implication for HRD Research and Practice. *Human Resource Development Review*, 16(1), 35–59. <https://doi.org/10.1177/1534484317690063>

- [60] Shah, N., Napier, C. J., & Holloway, R. (1992). The Cadbury Report 1992: Shared Vision and Beyond. 1–42. <https://www.frc.org.uk/News-and-Events/FRC-Press/Press/2014/September/FRC-updates-UK-Corporate->
- [61] Shan, C. M., Razak, N. H. A., & Ali, A. B. I. (2018). The impact of board of directors' characteristics and remuneration on companies' performance in Malaysia. *Indian Journal of Public Health Research and Development*, 9(11), 1220–1221. <https://doi.org/10.5958/0976-5506.2018.01625.X>
- [62] Sila, V., Gonzalez, A., & Hagendorff, J. (2016). Women on board: Does boardroom gender diversity affect firm risk? *Journal of Corporate Finance*, 36, 26–53. <https://doi.org/10.1016/j.jcorpfin.2015.10.003>
- [63] Singh, V., & Vinnicombe, S. (2004a). Why so few women directors in top UK boardrooms? Evidence and theoretical explanations. *Corporate Governance: An International Review*, 12(4), 479–488. <https://doi.org/10.1111/j.1467-8683.2004.00388.x>
- [64] Singh, V., & Vinnicombe, S. (2004b). Why So Few Women Directors in Top UK Boardrooms? Evidence and Theoretical Explanations. *Corporate Governance: An International Review*, 12(24), 479–488. <https://doi.org/10.1111/j.1467-8683.2004.00388.x>
- [65] Skaggs, S., Stainback, K., & Duncan, P. (2012). Shaking things up or business as usual? The influence of female corporate executives and board of directors on women's managerial representation. *Social Science Research*, 41(4), 936–948. <https://doi.org/https://doi.org/10.1016/j.ssresearch.2012.01.006>
- [66] Sonnabend, S. (2015). Gender Diversity in the Corporate Boardroom: Creating a Tipping Point for Change. *Journal of Management Inquiry*, 24(2), 212–213. <https://doi.org/10.1177/1056492614546265>
- [67] Srinivasan, V., & George, R. (2013). Building the Women Directorship Pipeline in India: An Exploratory Study. Working Paper No 427, September. <https://doi.org/10.2139/ssrn.2346109>
- [68] Terjesen, S., & Sealy, R. (2016). Board Gender Quotas: Exploring Ethical Tensions from A Multi-Theoretical Perspective. *Business Ethics Quarterly*, 26(1), 23–65. <https://doi.org/10.1017/beq.2016.7>
- [69] Thomas, H., & O'Neal, D. (1995). Director Networks / Director Selection : The Board ' s Strategic Role. *European Management Journal*, 13(1), 79–90.
- [70] Torchia, M., Calabrò, A., Gabaldon, P., & Kanadli, S. B. (2018). Women directors contribution to organizational innovation: A behavioral approach. *Scandinavian Journal of Management*, 34(2). <https://doi.org/10.1016/j.scaman.2018.02.001>
- [71] Torchia, M., Calabrò, A., & Huse, M. (2011a). Women Directors on Corporate Boards: From Tokenism to Critical Mass. *Journal of Business Ethics*, 102(2), 299–317. <https://doi.org/10.1007/s10551-011-0815-z>
- [72] Torchia, M., Calabrò, A., & Huse, M. (2011b). Women Directors on Corporate Boards: From Tokenism to Critical Mass. *Journal of Business Ethics*, 102(2), 299–317. <https://doi.org/10.1007/s10551-011-0815-z>
- [73] Trinarningsih, W., Anugerah, A. R., & Muttaqin, P. S. (2021). Visualizing and mapping two decades of literature on board of directors research: a bibliometric analysis from 2000 to 2021. *Cogent Business and Management*, 8(1). <https://doi.org/10.1080/23311975.2021.1994104>
- [74] Vieira, E. S. (2018). Board of directors characteristics and performance in family firms and under the crisis. *Corporate Governance (Bingley)*, 18(1), 119–142. <https://doi.org/10.1108/CG-01-2017-0010>
- [75] Vu, M. C., Phan, T. T., & Le, N. T. (2018). Relationship between board ownership structure and firm financial performance in transitional economy: The case of Vietnam. *Research in International Business and Finance*, 45(August), 512–528. <https://doi.org/10.1016/j.ribaf.2017.09.002>
- [76] Wiley, C., & Monllor-Tormos, M. (2018). Board Gender Diversity in the STEM & F Sectors: The Critical Mass Required to Drive Firm Performance. *Journal of Leadership and Organizational Studies*, 25(3), 290–308. <https://doi.org/10.1177/1548051817750535>
- [77] Xu, S., Zhang, X., Feng, L., & Yang, W. (2020). Disruption risks in supply chain management: a literature review based on bibliometric analysis. *International Journal of Production Research*, 58(11), 3508–3526. <https://doi.org/10.1080/00207543.2020.1717011>
- Ye, K. (2014). Independent director cash compensation and earnings management. *Journal of Accounting and Public Policy*, 33, 391–400.

Annexure – 1 : Top 20 influential journal articles on need for women (board gender diversity)

| Title | DOI | Total Citation | Publication year | Affiliated University (Primary) | Author | Journal Name | Impact Factor (5 years) | Publisher | Country of Journal |
|---|-------------------------------|----------------|------------------|---------------------------------|-------------|--------------------------------|--------------------------|-----------------------|--------------------|
| Women In The Boardroom And Their Impact On Governance And Performance | 10.1016/j.jfineco.2008.10.007 | 2083 | 2009 | University Of Queensland | R B Adams | Journal Of Financial Economics | 7.786 | Elsevier | Netherlands |
| Corporate Governance Board Diversity And Firm Value | 10.1111/1540-6288.00034 | 1481 | 2003 | Oklahoma State University | D A Carter | Financial Review | 1.092(2022) | Wiley - Blackwell | United States |
| The Effects Of Corporate Governance And Institutional Ownership Types On Corporate Social Performance | 10.2307/256977 | 984 | 1999 | University Of Missouri | R A Johnson | Academy Of Management Journal | 10.178(2022) | Academy of Management | United States |
| Gender Diversity In The Boardroom And Firm Financial | 10.1007/s10551-007-9630-y | 910 | 2008 | University Of Stirling; | K Campbell | Journal Of Business Ethics | 6.137(2021) | Springer | Netherlands |

| | | | | | | | | | |
|--|--|-----|------|-------------------------------|---------------------|---|-----------------|-----------------------------|-----------------------|
| al Perform ance | | | | | | | | | |
| Board Of Directo r Diversit y And Firm Financi al Perform ance | 10.1111/1467- 8683.00011 | 879 | 2003 | Rutgers University; | N L Erhar d | Corpo rate Gover nance: An Intern ationa l Revie w | 7.875 (2021) | Wiley - Black well | United Kingdo m |
| The Impact Of Board Diversit y And Gender Compo sition On Corpora te Social Respon sibility And Firm Reputat ion | 10.1007/s1055 1-010-0505-2 | 846 | 2010 | Pace University; | S E Bear | Journa l Of Busin ess Ethics | 6.137(2021) | Spring er | Netherla nd |
| The Gender And Ethnic Diversit y Of Us Boards And Board Commit tees And Firm Financi al Perform ance | 10.1111/j.1467- 8683.2010.008 09.x | 803 | 2010 | Oklahoma State University; | D A Carter | Corpo rate Gover nance: An Intern ationa l Revie w | 7.875 (2021) | Wiley - Black well | United Kingdo m |
| Women Directo rs On Corpora te | 10.1111/j.1467- 8683.2009.007 42.x | 727 | 2009 | Indiana University | R S Terjes en | Corpo rate Gover nance: An | 7.875 (2021) | Wiley - Black well | United Kingdo m |

| | | | | | | | | | |
|---|--|-----|------|------------------------------------|--------------------|--|------------------|--------------------------------------|-----------------------|
| Boards A Review And Research Agenda | | | | | | Intern ationa l Revie w | | | |
| Does Board Gender Diversit y Improv e The Informa tiveness Of Stock Prices | 10.1016/j.jacce co.2011.01.005 | 599 | 2011 | Monash University | FA Gul | Journa l Of Accou nting And Econo mics | 5.961(2022) | Elsevi er | Netherla nd |
| Women Directo rs On Corpora te Boards From Tokenis m To Critical Mass | 10.1007/s1055 1-011-0815-z | 589 | 2011 | University Of Rome Tor Vergata | M Torch ia | Journa l Of Busin ess Ethics | 6.137(2021) | Spring er | Netherla nd |
| Organiz ational Predict ors Of Women On Corpora te Boards | 10.5465/AMJ.2 007.26279222 | 560 | 2007 | Arizona State University | A Z Hillm an | Acade my Of Mana gemen t Journa l | 10.178 (2022) | Acade my of Mana gemen t | United States |
| Additio ns To Corpora te Boards The Effect Of Gender | 10.1016/j.jcorp fin.2003.12.001 | 534 | 2005 | University Of Nebraska- Lincoln | KA Farrel l | Journa l Of Corpo rate Finan ce | 4.675(2022) | Elsevi er | Netherla nd |
| Does Female Board Represe ntation Influen | 10.1111/j.1467- 8683.2007.005 70.x | 526 | 2007 | Copenhagen Business School | C E Rose | Corpo rate Gover nance: An Intern | 7.875 (2021) | Wiley - Black well | United Kingdo m |

| | | | | | | | | | |
|--|--|-----|------|--|--------------------|---|-----------------|-------------------------------|-----------------------|
| ce Firm Perform ance The Danish Evidenc e | | | | | | ationa l Revie w | | | |
| The Contrib ution Of Women On Boards Of Directo rs Going Beyond The Surface | 10.1111/j.1467- 8683.2010.007 84.x | 495 | 2010 | The University Of Technology | S E Nielse n | Corpo rate Gover nance: An Intern ationa l Revie w | 7.875 (2021) | Wiley - Black well | United Kingdo m |
| Gender Diversit y Board Indepen dence Environ mental Commit tee And Greenh ouse Gas Disclos ure | 10.1016/j.bar.2 014.01.002 | 489 | 2015 | Southwestern University Of Finance And Economics | L O Liao | Britis h Accou nting Revie w | 5.36 (2022) | Acade mic Press Inc. | United States |
| Green Govern ance Boards Of Directo rs Compo sition And Environ mental Corpora te Social Respon sibility | 10.1177/00076 50310394642 | 464 | 2011 | Lehigh University | C I Post | Busin ess And Societ y | 7.205(2022) | Sage Public ations | United Kingdo m |
| Do Women Directo | 10.1016/j.jcorp fin.2013.11.016 | 447 | 2014 | University Of Texas | N PAS | Journa l Of Corpo | 4.675(2022) | Elsevi er | Netherla nd |

| | | | | | | | | | |
|---|-------------------------------|-----|------|--------------------------------|--------------------|--|-----------------|---|-----------------------|
| rs Improv e Firm Perform ance In China | | | | | Liu | rate Finan ce | | | |
| Do Women In Top Manage ment Affect Firm Perform ance A Panel Study Of 2500 Danish Firms | 10.1108/17410 400610702160 | 440 | 2006 | Aarhus School Of Business | N H Smith | Intern ationa l Jour nal Of Produ ctivity And Perfor mance Mana gemen t | 2.852 (2022) | Emera ld Group Publis hing Ltd | United Kingdo m |
| Gender Diversit y In Corpora te Govern ance And Top Manage ment | 10.1007/s1055 1-007-9482-5 | 431 | 2008 | Notreported | C Franc oeur | Journa l Of Busin ess Ethics | 6.137(2021) | Spring er | Netherla nd |
| Women On Corpora te Boards Of Directo rs And Their Influen ce On Corpora te Philant hropy | 10.1023/A:102 1626024014 | 363 | 2003 | University Of North Alabama | RJ Willia ms | Journa l Of Busin ess Ethics | 6.137(2021) | Spring er | Netherla nd |