



The intellectual structure of gender equality research in the business economics literature

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Abstract

In both the public and private sectors, gender equality is a major issue faced by modern management. It is also a primary concern for the global sustainable development defined by the UN 2030 Agenda. Gender equality, as a research topic, has been explored from many different social, economic and political sides; nevertheless, gender equality in business economics is still a very promising research field since the everchanging global organisational environment requires frequent updates and polysemic approaches. The aim of this study is to identify and visualise the intellectual structure and dynamics of gender equality research on business economics literature through a bibliometric quantitative literature analysis. Our results found 12 main lines of research. They also identify the trending topics, sources of knowledge, and literature dissemination paths along these lines between 2001 and 2020. This work contributes to the field of gender issues by showing its intellectual structure and providing a research agenda and identifying future research lines and gaps in the area.

Keywords Gender equality · Salary gap · Women on boards · Quotas · Business economics · Bibliometric

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1 Introduction

Gender equality is a major issue in modern management, both in the public and private sectors (Báez et al. 2018), and it is a primary concern for the global sustainable development defined by the UN 2030 Agenda (Miotto et al. 2019). Gender equality, as a research topic, has been explored from many different social, economic and political perspectives; nevertheless, gender equality in business economics is still a very promising research field since the everchanging global organisational environment requires frequent updates and polysemic approaches (Belingeri et al. 2021). The more recent research topics on gender equality in business economics focus on women on boards of directors (Nguyen et al. 2020), salary gaps (Wang et al. 2019), risk-taking and financial performance impacts (Baixauli-Soler et al. 2017; Papanastasiou and Bekiaris 2020), CSR and information disclosure (Pucheta-Martínez et al. 2021), and family businesses (Kubíček and Machek 2019; González et al. 2020).

The increasing number of publications on gender issues makes it difficult to monitor the evolution of this field of research. Knowledge accumulation reduces the assimilation capacity of researchers, making it difficult to keep up to date. This has led to the elaboration of several literature reviews on gender issues during the twenty-first century. Most of these literature reviews are focused on the following main topics: gender and entrepreneurship (Moreira et al. 2019), women on boards of directors (Terjesen et al. 2009; Cabrera-Fernández et al. 2016; Kent Baker et al. 2020; Nguyen et al. 2020), women in international business (Bullough et al. 2017), and gender and corporate social responsibility (Amorelli and García-Sánchez 2021). We would also like to highlight a literature review about gender equality in business from 2011 that analyses the research in this field from 1995 to 2010 (Broadbridge and Simpson 2011).

These literature reviews are focused on specific topics; nevertheless, there is a lack of a multidisciplinary and interconnected overview of the gender equality field that may deeply understand the cause and effect of the different issues involved (Kirsch 2018). Existing literature reviews fail to provide a comprehensive, clear picture of what has been studied thus far and, therefore, the most relevant and promising future research lines should occur in this area (Belingeri et al. 2021).

In addition, some key issues in understanding the state of the art in this field of research have not been solved, mainly due to the qualitative nature of previous research. Furthermore, several recent studies have not been included in any generic bibliographic analysis about gender issues in business. These previous investigations identify the main lines of research on gender issues; nevertheless, there is no study that classifies the intellectual structure of the research field, the trends that have caught the attention of researchers, or the investigations that have facilitated the dissemination of knowledge connecting different lines of research. The intellectual structure definition is a comprehensive analysis of the domain of a study field; it is a structured way to define the boundaries and the map of discipline (Hota et al. 2020).

Knowing the intellectual structure of the field is key to defining research objectives that contribute to current studies, helping to incorporate new research

areas into the field, and defining a relevant and updated research agenda (Carayannis et al. 2021). Bibliometric techniques are designed to achieve this purpose: systematically design and visualise the intellectual structure and mapping of a research field (Donthu et al. 2021; Silva et al. 2021). Unlike qualitative literature reviews, such as systematic reviews, bibliometric methods apply quantitative criteria to analyses large amounts of information and to discover knowledge networks and their structure (Zupic and Cater 2015). In addition, this methodology reduces the subjectivity grade of qualitative research associated with researcher bias.

To date, a nonbibliometric literature review of gender equality in business economics has been performed. Previous researchers, such as Broadbridge and Simpson (2011), performed a qualitative literature review, whereas all other literature analyses focused on specific topics linked to gender issues. Taking into consideration the need to improve the theoretical framework of gender equality in business (Hong et al. 2020), the aim of this study is to identify and visualize the intellectual structure and dynamics of gender equality research in the business economics literature and academic field. The research questions we would like to answer are as follows:

- RQ1. Which are the most relevant research topics in the gender equality field in the business economics discipline?
- RQ2. What are the most influential documents in the field of gender equality in business economics?
- RQ3. What are the sources of knowledge on gender equality in business economics?
- RQ4. How has gender equality research in business economics evolved in the last twenty years?
- RQ5. How are the different topics related to gender equality interconnected?
- RQ6. Which are the most relevant topics that will define the future research agenda in this field?

The novelty of this study lies in these specific aspects. First, for the first time in this knowledge area, we use a bibliometric method suitable to review a large corpus of documents using a quantitative technique able to perform an objective and unbiased analysis that provides accountable and trustworthy data (Donthu et al. 2021; Kumar et al. 2022). Second, we provide a holistic perspective of gender equality in the business economics field, avoiding a focus on only one issue, broadening the spectrum of the research and allowing a wider, more inclusive and multidisciplinary assessment (organisational behaviour, people management, legitimacy, etc.). Third, we highlighted the connections of the entire research field of gender equality studies in the business economics literature. Fourth, we define an update and analytic state of the art in terms of gender equality in business economics, and we propose a future, relevant and useful research agenda.

This document is organised as follows: the next section explains the methodology, and we describe the bibliometric techniques and concepts used. Afterword, the results section explains the main lines of research on the field, trends and connections. Finally, the results are discussed, and a research agenda is suggested.

2 Methodology

The study of the intellectual structure of gender equality research in the business economics literature was carried out using bibliometric data. To do so, this study adopts methodological procedures similar to those of previous bibliometric research in the field (e.g. Kumar et al. 2022) and implements the Scientific Procedures and Rationales for Systematic Literature Reviews (SPAR-4-SLR) protocol, which consists of three major stages: article assembling, arranging and assessing (Paul et al. 2021).

2.1 Assembling

To assemble the corpus of articles on the defined research field, we identify the search keywords related to gender equality in the business economics literature. These keywords are included and organised into the following search string: “gender diversity” or “gender gap” or “gender equality” or “gender parity” or “gender equity”. These search keywords have been chosen taking into consideration previous research on gender equality that refer to all these topics as highly linked and related to an equal sharing of opportunities of progress, properties, paid work, money, decision-making power and time management between men and women (Furlotti et al. 2019; Miotto and Vilajoana-Alejandre 2019; Mehng et al. 2019). These concepts are also included in international reports, indices and institutional policies such as “The 2019 Report on Equality between Women and Men in the European Union” (European Commission 2019), the “Sustainable Development Goal 5” indicators (United Nations 2019), the “Gender Development Index” (United Nations Development Programme 2020), the “Gender Empowerment Measure” (United Nations Development Programme 2020) and the “Global Gender Gap Report” (GGI) (World Economic Forum 2019).

We use the abovementioned search string through the Web of Science (WoS) document titles, abstracts, and keywords. Even if the Web of Science (WoS) includes less articles than the Scopus database, in the business economics fields, the percentage of unique and overlapping citations in Scopus and WoS are very similar (Martín-Martín et al. 2018). In addition, WoS is the most widely used database in the business economics literature (Zupic and Cater 2015), even if scientometric scholars have not yet decided which database is the best one (Pranckutė 2021). The search resulted in 22,263 documents.

2.2 Arranging

To arrange the corpus of articles returned from the assembling stage, we applied these filters in the WoS database: research area and publication year. We filtered the corpus of articles taking into consideration the business economic research area. This led to a reduced corpus of 3456 articles. We focused on articles published during the twenty-first century, and the timeframe of the study was

2001–2020. Although the first articles on this subject were published in 1984, from the twenty-first century, there was a high increase, and since then, more than 20 documents have been published annually. This timeframe definition led to a corpus consisting of 3316 documents. Finally, we identified 51 documents whose references were invalid or unreadable. This filter was important because the bibliometric analysis that we apply (co-citations) uses references as the source of analysis. Thus, the final research sample consisted of 3265 documents.

2.3 Assessing

This study applies a bibliometric analysis approach to assess a corpus of 2,816 articles on gender equality. Bibliometric methodology uses quantitative techniques with the aim of summarising large quantities of bibliometric data to show the intellectual structure of a research field (Donthu et al. 2021).

Inspired by previous bibliometric research on the business economics field (e.g., Díez-Martín et al. 2021), this study performs a bibliometric analysis using science mapping based on cocitation analysis in CiteSpace. Science mapping is a useful technique to explore the relationships between research constituents. It offers an organised visual representation of the characteristics and relationships among different studies in a scientific area (Mukherjee et al. 2022). As opposed to the manual analysis of quantitative and qualitative data, science mapping is a more efficient and objective methodology due to automated data analysis (Lim et al. 2022; Mukherjee et al. 2022).

Cocitation is a science mapping technique (Cobo et al. 2011; Mukherjee et al. 2022). It defines the frequency with which two papers ‘A’ and ‘B’ are cited together by a third paper ‘C’ (Small 1973). The idea behind this approach is that when two papers are cited together, they will probably share similar theories, assumptions, concepts or methods. Co-citation analysis is one of the most widely used methods for bibliometric research in social science disciplines (Zupic and Cater 2015) and is useful for uncovering relationships between cocited publications (foundational knowledge) (Mukherjee et al. 2022). Cocitation analysis highlights networks between different studies and can detect paradigm shifts, trends and schools of thought from a long-term perspective (e.g. Delgado-Aleman et al. 2022). To enrich the assessment of the bibliometric analysis, we used two network metrics (Donthu et al. 2021): burstness and betweenness centrality. These indicators provide additional valuable information about the network.

We used CiteSpace software for the cocitation analysis based on previous and well-known reviews of bibliometric software tools (Moral-Munoz et al. 2019). CiteSpace is a Java-based scientific detection and visualisation software that analyses the evolution of a research field through bibliometric co-citation (Chen 2006). Previous research in business economics used this software to understand the intellectual structure of a body of knowledge (Cruz-Suárez et al. 2020; Pascual-Nebreda et al. 2021).

Furthermore, this study provides a proposal of a future research agenda and research gaps based on the analysis of the most relevant topics and networks. The next section shows the findings of the study.

3 Findings

In the following two sections, we show the results that answer the research questions. In the first section, we show the main lines of research on gender equality in business economics (RQ1). This section also shows which are the most influential documents on gender equality, identifying the documents that have received more attention by the scholars of this area and that have become trending topics (RQ2). In addition, we describe the sources of knowledge of each main research line (RQ3). The second section describes the evolution of gender equality research in business economics in the last twenty years (RQ4). Furthermore, we highlight the research articles that are the node of connection between the different lines of research related to gender equality (RQ5). Finally, we propose a future research agenda, highlighting the most relevant topics that will define the future research lines in this field (RQ6).

3.1 Main lines of research

The main lines of research on gender issues in the business economics literature are shown in Table 1 (RQ1). We found 12 main research lines. Each research line is a cluster generated by CiteSpace and based on co-citations. To confirm that our clusters are homogeneous between themselves (cohesion) and differentiated from the others (separation), we use the silhouette value. This measure is used to identify

Table 1 Main lines of research and number of trending topics

ClusterID	Size	Silhouette	Mean (year)	Label	N° trending topics		
					2001–2010	2011–2015	2016–2020
1	93	0.875	2016	Risk Management	0	0	7
2	82	0.845	2015	Board Performance	0	8	13
3	79	0.858	2010	Quotas and Tokenism	1	39	2
4	77	0.959	2016	CSR	0	3	4
5	76	0.934	2006	Team Diversity	15	6	0
6	56	0.959	2005	Pay Gap	10	2	0
7	54	0.975	2011	Competitiveness	2	24	2
8	23	0.971	2011	Innovation	0	7	1
9	15	0.984	2015	Wage Gap Reasons	0	1	2
10	9	0.997	2011	Productivity	0	3	0
11	9	0.995	2016	TMT	0	0	0
12	6	0.989	2002	Labour Force Access	0	0	0

the quality of a cluster configuration. Each cluster shows a Silhouette value greater than 0.845, above the recommended 0.7 (Chen et al. 2010). In addition, to measure the network quality, CiteSpace uses the modularity Q (from 0 to 1), which identifies the capability of a network to be decomposed into multiple components or clusters (Chen et al. 2010). In this study, the gender research network shows a reasonably well-coupled distribution of the clusters, reaching a Modularity Q of 0.7495.

Furthermore, Table 1 shows the number of trending topics of each line of research (RQ2). CiteSpace detects trends (burst documents) by applying the algorithm of Kleinberg (2003). The burstness identifies the most relevant documents that have been considered a source of a research trend, since they have received a high number of citations during a specific timeframe (Kim and Chen 2015; Hou et al. 2018). Supplementary material of Appendix 1 shows the results of the burst analysis, which illustrates the trending topics in the research field from 2001 to 2020.

The main lines of research on gender issues in the business economics literature are described below. The order of the description of the clusters is based on the size of the research line. Supplementary material of Appendix 2 identifies the documents included in each cluster. These documents represent the main sources of knowledge on gender equality in business economics (RQ3).

Cluster #1–Risk Management—is the greatest line of research in the field of gender in the business economics literature. It contains the largest number of referenced documents (93). This indicates that most research in this field has focused on the study of how gender risk profiles on boards of directors affect corporate financial performance. According to several authors, the lower risk-taking attitude and the higher risk aversion in firms run by female CEOs have lower leverage, less volatile earnings, and a higher chance of survival than otherwise similar firms run by male CEOs (Cumming et al. 2015; Faccio et al. 2016). In addition, the inclusion of women on boards of directors may improve fraud control and lower the impact of risky financial operations (Lucas-Pérez et al. 2015). Specifically, these papers analyse how gender board composition affects conservatism or risk tolerance in the decision-making process from the financial side (Berger et al. 2012; Palvia et al. 2015; Hutchinson et al. 2015; Bennouri et al. 2018). Gender differences and approaches in risk-taking tolerance affect corporate financial performance (Hoogendoorn et al. 2013), dividend pay-out policies (Ye et al. 2019), forecast accuracy and audit quality (Gul et al. 2013), increase ROA and ROE, and significantly decrease Tobin's Q (Bennouri et al. 2018). This line of research has become the second main research trend in the field since 2017, based on seven burst documents (Supplementary material of Appendix 1 shows the results of the burst analysis, which illustrates trending topics in the research field during 2001–2020). Furthermore, the sources of knowledge in cluster #1 show an average year of publication in 2016. This cluster group shows recent and updated articles and research theories.

Cluster #2–Board Performance—represents the second largest areas of research, with more than 80 research papers. The mean year of the investigations on this cluster is 2015. Academics in this area have focused on analysing the relationship between gender diversity on boards of directors and firm performance (Lückerath-Rovers 2013; Chapple and Humphrey 2014). This line of research has become the main research trend in the field since 2017 (13 burst documents, see Supplementary

material of Appendix 1). For example, they analyse the relevance of the morality or legitimacy of gender diverse boards from the point of view of stakeholders' perceptions (Gregory-Smith et al. 2014; Perrault 2015). This cluster also analysed quota issues and their usefulness (Seierstad 2016). Characteristics such as firm size, type of business, industry, focus on innovation (Cabeza-García et al. 2021), size of the board (Strøm et al. 2014) or country gender parity have been studied to monitor the impact of gender board diversity and company outcomes (Post and Byron 2015).

Researchers on Cluster #3—Quotas and Tokenism—are focused on the presence of women in the companies' boards of directors and, specifically, on the application of quotas to guarantee the presence of female directors. This practice has been internationally discussed and often adopted. Quota implementation has been considered formally, including quotas in the national legal framework, or informally, as a best practice in several private organizations (Adams and Funk 2012). In this context, researchers analyse whether and how organisations should ensure the presence of women in the boardroom and their real impact on governance and performance. (Adams and Ferreira 2009; Ahern and Dittmar 2012). Research indicates that women on board performance improves when a critical mass of women is reached, since according to the tokenism literature, women may be reticent to advocate for other women in powerful positions (Torchia et al. 2011). For example, with the presence of at least three women and above, CSR indicators improve (Post et al. 2011). However, the appointment of women to a board driven by tokenism does not improve corporate performance and results (Abdullah 2014). This line of research has been the most trending topic of the field, particularly between 2010 and 2015 (39 burst papers). In fact, the average year of publication of the sources of knowledge in cluster #3 is 2010. Although it is one of the most prolific lines of research in this field and has been trending since 2005, the scientific advances published in this cluster are based on more consolidated and old papers. In other words, advances in this line of research are taking place at a slower rate than those from lines of research with a more recent average year of publication.

Cluster #4—CSR—refers to articles focused on how gender diversity on boards of directors influences CSR performance, strategies and policies. Specifically, the quality and quantity of nonfinancial information and data companies run by women are disclosed compared with organisations managed mainly by men. For example, several authors affirm that diverse and inclusive boards of directors tend to disclose more and better quality information about environmental impact (Frias-Aceituno et al. 2013; Amran et al. 2014; Liao et al. 2015) and that gender diversity has a positive influence on CSR. Researchers suggest that female talent can play a strategic role in enabling firms to manage their social responsibility and sustainable practices appropriately (Setó-Pamies 2015), and this CSR output may improve corporate legitimacy (Zhang et al. 2013; Díez-Martín et al. 2021) and firm value (Fernández-Gago et al. 2016). Nevertheless, gender diversity is a key factor for CSR performance if female members are not chosen due to quota allocation since the control of the board of directors' assignment is negative for the CSR decision-making process (Hafsi and Turgut 2013). Others focus their research on finding insights into the link between board diversity and CSR, particularly the importance of linking gender diversity and CSR decision-making processes (Rao and Tilt 2016) and the minimum

number of women (at least 3) that may make the difference in CSR strategy decisions (Fernandez-Feijoo et al. 2014). This is a relatively recent cluster, with an average year of publication of 2016. Seven research trends were created between 2001 and 2020.

Cluster #5–Team Diversity–represents a relatively wide area of research with 76 academic papers. The mean year of the papers in this cluster is 2006; therefore, it includes one of the oldest areas of research within the gender equality field and the most trending before 2010. It generated 15 burst papers between 2001 and 2010. This cluster addresses the topic of team diversity and team outcomes, the differences between group members and their effect on group performance (van Knippenberg and Schippers 2007). Researchers have analysed the characteristics or factors that lead firms to appoint more women to top management teams and their outcomes on a firm's performance. Along this line, they identify the effects of team diversity on firm performance in diverse contexts (Horwitz and Horwitz 2007; Joshi and Roh 2009). For instance, female top managers' qualifications are relevant for improving organisational performance (Smith et al. 2006). Academics study the elements that motivate the decisions of firms regarding including or not including women on their boards of directors, suggesting that fulfilling internal or external demands has a strong influence (Farrell and Hersch 2005; Francoeur et al. 2008) and that, in many cases, board diversity is influenced by a firm's external business environment and requirements (Brammer et al. 2007). In other situations, gender diversity in top management positions transcends external factors (Krishnan and Park 2005).

Cluster #6–Pay Gap–focuses on the existence of the gender pay gap, the reasons for this issue, and the differences between industries, kind of organisation and countries (Blau and Kahn 2003, 2006; Albrecht et al. 2003; Arulampalam et al. 2007). The mean year of publication of the sources of knowledge of this cluster is 2005, representing one of the oldest areas of research in the field. It was the second trending line of research before 2010 (10 burst papers). Researchers have shown that the gender gap typically widens towards the top of the wage distribution (the “glass ceiling” effect), and in a few cases, it also widens at the bottom (the “sticky floor” effect) (Albrecht et al. 2003; Arulampalam et al. 2007). According to these cluster's papers, the cause of this gap has its rut in the rise of married female labour force participation that occurred in the last century, when several households must decide whether a married woman should work or not, and in most cases, a second salary was necessary to maintain the family (Blau and Kahn 2003; Greenwood et al. 2005; Attanasio et al. 2008). The segregation of women into lower-paying occupations, industries, and establishments accounts for a sizable fraction of the sex gap in wages (Bayard et al. 2003). Nevertheless, women are promoted at roughly the same rate as men but may receive smaller wage increases upon promotion; women are just as likely as men to be promoted but find themselves stuck at the bottom of the wage scale for the new job class (Booth et al. 2003). The increase in educational levels contributed decisively towards greater wage inequality (Machado and Mata 2005), since higher levels of wage compression (measured in absolute or relative terms) are positively related to training (Almeida-Santos and Mumford 2005).

Cluster #7–Competitiveness–research is about the study of the differences between women and men when acting in a competitive environment (Croson and

Gneezy 2009; Buser et al. 2017). There is evidence that demonstrates that women are less inclined to enter competition. They feel less comfortable in a highly competitive environment, and this attitude increases with age (Datta Gupta et al. 2013; Andersen et al. 2013). Researchers have explained this gender gap by stating that men are more overconfident (Niederle and Vesterlund 2005). This attitude affects and limits women's career progress (Balafoutas and Sutter 2012) or the participation of women in science (Fryer and Levitt 2010; Moss-Racusin et al. 2012). This cluster is very useful for researchers seeking to justify differentiation in gender-biased career orientation and professional progress. Along this line, some results suggest that preferences over uncertainty can be just as important as preferences over competition in driving job-entry choices (Flory et al. 2015). This line of research has been the second most trending topic between 2010 and 2015 (24 burst papers). The average year of publication of the sources of knowledge in cluster #7 is 2011.

Researchers on cluster #8–Innovation–try to set a theoretical framework for the relationship between gender and innovation (Agnete Alsos et al. 2013) through the analysis of how gender diversity within R&D teams impacts firm innovation but also how gender policies aimed at creating, maintaining, and disrupting institutions (Lawrence et al. 2011). The number of papers within this cluster is 23; therefore, it is one of the smallest areas of study within the field. The mean year of the publications is 2011. The results show that innovation is more advanced in higher gender diverse teams (Van Dijk et al. 2012; Díaz-García et al. 2013). Additionally, the relation between gender and other types of diversity, such as age, education or ethnicity, are also studied when considering the effect on innovation (Østergaard et al. 2011). The average year of publication of the sources of knowledge in this cluster is 2011. This line of research generated 7 trending topics between 2010 and 2015.

Cluster #9–Wage Gap Reasons–focuses on the reasons that explain the gender wage gap. The average year of publication of the sources of knowledge in this cluster is 2015, and it generated 3 trending topics between 2010 and 2020. This cluster stresses the idea that the origin of this breach resides in the different roles between women and men in family management and the time dedicated to family care. While convergence between men and women in traditional human capital factors (education and experience) played an important role in the narrowing of the gender wage gap, these factors explain relatively little of the wage gap since women exceed men in educational attainment and have greatly reduced the gender experience gap (Blau et al. 2013). Nonetheless, labour-market experience remains an important factor in analysing female wages (Blau and Kahn 2017). Women are less likely to work in results-driven companies, with highly variable salaries linked to employees' objective achievement. Furthermore, women receive only 90% of the firm-specific pay premiums earned by men, and this practice will contribute to the gender wage gap since women are less likely to work at high-paying firms or if women negotiate worse wage bargains than men (Card et al. 2016). The salary gender gap would be considerably reduced if firms did not economically reward individuals who laboured long hours, something that is very common, for example, in industries such as the corporate, financial, and legal worlds and less common in technology, science, and health (Goldin 2014). To explain women's shorter time dedicated to work, researchers focus their attention on the analysis of family structure and management:

motherhood and children's education are two factors that explain why women's income, in middle age, has a gap of up to 32% compared with men's salary (Angelov et al. 2016). Motherhood is one of the most important factors of the gender salary gap (Adda et al. 2017). Studies show that, for example, the Motherhood delay leads to a substantial increase in earnings of 9% per year of delay, an increase in wages of 3%, and an increase in work hours of 6 (Miller 2011). Likewise, when a woman becomes more likely to earn more than a man, marriage rates decline. In couples where the wife earns more than the husband, the wife spends more time on household chores; moreover, those couples are less satisfied with their marriage and are more likely to divorce (Bertrand and Pan 2013).

Cluster #10–Productivity–research is about gender and productivity. Progress in this line of research is slowing down. The average year of publication of the sources of knowledge in this cluster is 2011, and it generated 3 trending topics before 2010. According to these articles, women progress less and more slowly in their professional careers, and their salaries are lower than those of men for three main reasons: less advanced training, differences in career interruptions (specifically motherhood), and differences in weekly hours (specifically to take care of the kids) (Bertrand et al. 2010; Becker et al. 2010). The three of them are related to a lack of productivity. The cluster analyses the link between gender and productivity in several industries, environments and countries (Peterman et al. 2011; Kilic et al. 2015).

Cluster #11–TMT–is one of the smallest areas of research within the gender equality field, including only 9 papers. The mean year of the investigations is 2016; thus, it is one of the most recent topics among the updated research. Within this cluster, researchers explore the effect of female representation in top management teams (TMT) and firm performance (Schwab et al. 2016; Jeong and Harrison 2017). Several investigations focus on the effect of gender diversity in TMT and financial operations, such as initial public offerings or mergers and acquisitions (Parola et al. 2015; Quintana-García and Benavides-Velasco 2016). Additionally, the presence of female top managers is positively related to entrepreneurial outcomes in established firms, although these results are weakened in firms with many women among their employees since many times a female top manager is less likely to favour lower-level female employees, as her categorisation as a member of the TMT restricts gender-based favouritism (Lyngsie and Foss 2017). Moreover, aspects related to quotas on women on top management teams are also covered, identifying, for example, how the presence of a woman on a top management team (TMT) reduces the likelihood that another woman occupies a position on that team (Dezso et al. 2016).

Cluster #12–Labour Force Access–is the oldest and smallest line of research in this field. The average year of publication of the sources of knowledge in this cluster is 2002. It analyses factors that have caused an increase in women's access to the labour market, and references the revolution that transformed women's opportunities (Goldin 2006). Aspects such as fertility and motherhood are analysed: for example, birth control availability, such as the contraceptive pill, are considered key factors for increasing female employment (Goldin and Katz 2002). Moreover, women are currently more educated, attending college and graduate education (Jacob 2002; Charles and Luoh 2003), and marriage and motherhood ages are later, for example, as a result of the possibility of in vitro fecundation (Gershoni and Low 2021).

These aspects reduce the gender gap in career achievement. For example, the growing presence of a new type of man—one brought up in a family in which the mother worked—has been a significant factor in the increase in female labour force participation over time (Fernandez et al. 2004). Social policies are also considered in the female labour force, and their results in different countries. Nevertheless, for all women around the world, attaining the combination of reproductive empowerment and decent work is a challenge. Career advancement is interrupted by childbearing (Petrongolo 2004) despite social protection policies (Finlay 2021).

3.2 Connection between lines of research: turning points

In the following section, we show the research network of gender issues in the business economics academic literature (Fig. 1). We describe the evolution of the field (RQ4), and we highlight the connections between the main lines of research from 2001 to 2020 (RQ5). To identify the nodes that connect the different research topics, we use betweenness centrality (Bc). This indicator quantifies the number of times that a node acts as the most direct bridge (along the shortest path) between two other nodes (Chen et al. 2009).

To deeply comprehend the research network development, a diagonal observation perspective is recommended, from left to right. In this way, we can better understand how research on gender issues in the business economics literature

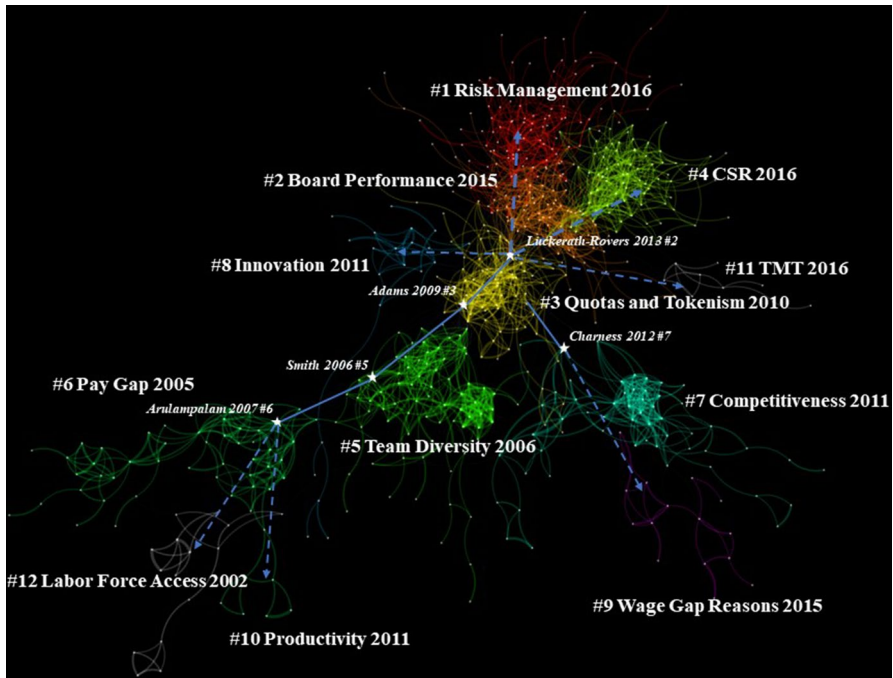


Fig. 1 Research network on gender issues in the business economics literature (2001–2020)

has evolved. We can see that the research focus shifted from studies about the issues of women's access to the labour market (year 2002) to different topics such as risk management, firms' performance and CSR.

During the first decade of the twenty-first century, studies on gender focused on analysing the factors that favour women's access to the labour market (cluster #12), the gender pay gap and its causes (cluster #6), and gender diverse working team performances (cluster #5). During these decades, the papers that have contributed the most to the research field, being the main intellectual bridges that connect different approaches in this field, are Arulampalam et al. (2007) and Smith et al. (2006). The first paper connects research between clusters #12 and #6 by bridging the gender pay gap and the factors conditioning access to the labour force and career progress, such as the provision of childcare ($B_c=0.13$). The second analyses the effects of management diversity and female quotas in the corporate context ($B_c=0.19$). This research shows that the positive effects of women in top management strongly depend on the qualifications of female top managers and not on their numbers or quotas, signalling a research diffusion path between clusters #5 and #3.

The second decade of the twenty-first century has seen a growth in the number of lines of research on gender issues. Researchers ponder the consequences of gender quotas and tokenism (cluster #3), relative to women's productivity in the corporate environment, especially in management positions (cluster #10), and the effects on innovation (cluster #8). They also explore the role that competitiveness plays as a determinant of the gender gap (cluster #7). The research line about productivity is strictly linked to the gender pay gap (cluster #6), since it relates women's performance and productivity with the salary gap. Nevertheless, the other research lines (#3, #8, #7) all converge into cluster #2 about women on boards and firm performance. Moreover, the most recent and updated research topics (#1, #4 and #11) are linked through cluster #2.

If we consider the evolution of gender topic research related to business economics, gender quotas and tokenism (#3) and woman on board performance (#2) represent the nodes and main line of connection of the actual knowledge network. On the one hand, it is observed that the research lines of the beginning of the century connect with cluster #3. At this stage, Adams and Ferreira (Adams and Ferreira 2009) research is a keystone of this cluster and of the whole network ($B_c=0.21$). The article affirms that when gender diversity in boards of directors is regulated by female quotas or driven by tokenism, it does not ensure a higher level of efficiency and effectivity of the boards and does not necessarily improve firm performance. On the other hand, it is also observed that the most current lines of research are connected with cluster #2. The keystone article of this cluster is Lückcrath-Rovers (2013), and it investigates the financial performance of Dutch companies both with and without women on their boards ($B_c=0.21$). The research shows that the presence of women in top management is a logical consequence of a more innovative, modern, and transparent enterprise, and it may improve stakeholders' management and reputation; nevertheless, it cannot prove that there is a positive relationship between gender board diversity and a firm's economic and financial performance.

An interesting node that connects cluster #2 and cluster #7 is represented by Charness and Gneezy's (2012) article that demonstrates that women are more conservative about investment, and they appear to be more financially risk averse than men ($B_c=0.10$). A different attitude in terms of risk taking and competitiveness may positively and negatively affect companies' performance if their management teams are more gender inclusive. Cluster #7 represents the link with cluster #9, where researchers, in addition to competitiveness, take into consideration and propose wage gap causes.

4 Research agenda

During the twenty-first century, research on gender issues in the business economics literature has largely advanced. This progress has led to broad and useful knowledge creation and spread, but at the same time, it has also revealed new research gaps that should be addressed. In this paper, we propose a future research agenda (RQ6) based on the actual context. To design this research agenda, we follow the same process as Díez-Martín et al. (2021). We identified the most relevant and existing gaps based on our reading of the newest trending topic documents (i.e., newest burst documents) and reflection of extant gaps under each major theme.

In Table 2, we describe the proposed research agenda, identifying the main topics, research questions and primary authors and sources of knowledge.

4.1 Beyond women on board and TMT: the middle management

Many studies analyse the influence of the presence of women on boards of directors on their effects on firm performance (Jane Lenard et al. 2014; Liu et al. 2014; Nguyen et al. 2020). The evolving role of women in society and the application of female quotas imposed by several countries have led researchers to dig into these aspects (Bøhren and Staubo 2014; Bertrand et al. 2018). Nevertheless, there are very few studies about women in middle management, since the literature on business economics has not yet addressed this topic, probably because it is much easier to obtain information about boards of directors, as the disclosure of this information is mandatory by law in most countries (Kent Baker et al. 2020). We learned much about gender diversity on boards and top management; nevertheless, research should better understand the presence and effect of gender diversity in middle management (Ferrary and Déo 2022), which is important for daily firm management. We should understand if and how gender diversity in middle management also affects firm performance if inclusive teams are more productive, committed, innovative, risk-taking biased, socially responsible, and accountable. We should examine whether diversity in middle management can make the difference, positively or negatively, or if there are no relevant differences, since strategic decisions depend only on top management teams. Thus, we encourage future research to pursue a better understanding of the role of women in middle management:

Table 2 Future research agenda for gender equality research in the business economics literature

Future research	Research questions	Supporting source
Beyond women on board and TMT: the middle management	<p>Which is the gender composition of firms' middle management? Which are the effects of gender diversity in middle management? How does gender diversity in middle management affect firm performance? Are inclusive teams more productive, committed, innovative, risk taken biased, socially responsible or accountable? Can diversity in middle management make the difference, positively or negatively, or there are no relevant differences, since strategic decisions depend only on top management teams?</p>	Kent Baker et al. (2020), Ferrary and Déo (2022)
Human resources and people management	<p>How is gender diversity managed and led in the recruiting process practices? How is the gender salary gap managed and dealt from the people management perspective? How are human resources departments dealing with women working conditions and gender equal career opportunities? How can we mitigate the effect of tokenisation in all the firm management level? Which are the external and internal factors that improve or decrease gender equality in management positions?</p>	Goldin (2014), Hutchinson et al. (2015), Nguyen et al. (2020)
Organisational behaviour	<p>How does internal organisational management improve gender inclusion and firm performance at the same times Which are the main soft skills and practices that increase internal gender equality and external competitiveness?</p>	Lucas-Pérez et al. (2015), Cabrera-Fernández et al. (2016), Adams (2016), Fernández-Temprano and Tejerina-Gaite (2020), Saitova and di Mauro (2021)

Table 2 (continued)

Future research	Research questions	Supporting source
What about customers?	<p>Do gender equality policies influence customer behaviours such as: purchase intention, brand advocacy, brand perceived ethicality?</p> <p>Is there a relationship between gender diversity in the organizations and customers behaviour?</p>	<p>García-Sánchez et al. (2020), Díez-Martín et al. (2021), Blanco-González et al. (2020), Hegner et al. (2017)</p>
Wage gap reasons	<p>Does access to the labour market affect the salary gap?</p> <p>Does access to higher education affect the salary gap?</p> <p>Which other variables affect the salary gap: family caring, motherhood, cultural prejudice, self-esteem, etc... . . . ?</p> <p>Could kids' education about equal responsibility in family caring reduce the salary gap in the future?</p> <p>Does the use of technology to improve flexible working schedules for parents, performance evaluation based on results and not on working hours, and a gender equal work-life balance opportunity help the reduction of the salary gap?</p>	<p>Wang et al. (2019), Kleinjans et al. (2017)</p>
Tangible and intangible assets	<p>Does the inclusion of women on boards of directors have a positive impact in the media, public opinion and firm reputation?</p> <p>Do gender equality policies impact external stakeholders' opinion and expectations?</p> <p>May, gender equality policies, if properly communicated, be a source of positive reputation and corporate legitimacy?</p> <p>How may organizational gender issues management improve corporate reputation and legitimacy?</p>	<p>Reddy and Jadhav (2019), Miotto et al. (2020), de Anca and Gabaldon (2014), Bear et al. (2010), Navarro-García et al. (2020), Blanco-González et al. (2020)</p>

Table 2 (continued)

Future research	Research questions	Supporting source
Gender in corporate governance and business ethics	<p>What is the relationship between gender issues management and business ethics? Are the perceived organisational ethicality and business ethics connected with the firm gender equality strategy and policies perspective and how?</p>	<p>Nguyen et al. (2020), Kagzi and Guha (2018), Ben-Amar et al. (2017)</p>
Size and geography matter	<p>How are gender issues considered and managed in small and medium size companies? Is the type of industry an important variable in terms of gender equality policies? Are the priorities in gender issues of some nations different from others due to institutional and socioeconomic differences? In the actual multicultural environment, future researchers should test previously raised hypotheses in new contexts?</p>	<p>Post and Byron (2015)</p>
	<p>How is gender equality perceived and managed in different kinds of organisations such as: state and private, large and small; in different industries; from more and less developed countries? How gender issues in business economics are perceived and addressed in different countries?</p>	

- What is the gender composition of firms' middle management?
- What are the effects of gender diversity in middle management?
- How does gender diversity in middle management affect firm performance?
- Are inclusive teams more productive, committed, innovative, risk-taking biased, socially responsible, or accountable?
- Can diversity in middle management make the difference, positively or negatively, or there are no relevant differences, since strategic decisions depend only on top management teams?

4.2 Human resources and people management

Few research studies on gender diversity are related to people management. For example, previous studies show that women in the recruiting process tend to increase board gender diversity (Hutchinson et al. 2015) or that flexible working schedules and compensation improve firms' gender inclusion (Goldin 2014; Nguyen et al. 2020). Nevertheless, there are several aspects related to human resources management that have not yet been covered, such as recruiting process practices and gender diversity; salary gender gap from the people management perspective; working conditions and gender equal career opportunities; the effect of tokenisation at all firm management levels; and external and internal factors that improve or decrease gender equality in management positions. Therefore, we encourage future research to answer the following questions:

- How is gender diversity managed and led in recruiting process practices?
- How is the gender salary gap managed and dealt with from the people management perspective?
- How are human resources departments dealing with the working conditions of women and gender-equal career opportunities?
- How can we mitigate the effect of tokenization at all firm management levels?
- What are the external and internal factors that improve or decrease gender equality in management positions?

4.3 Organisational behaviour

There are mechanisms that mediate the relationship between gender diversity and firm outcomes (Lucas-Pérez et al. 2015). Organisational behaviour variables may affect gender equality teams and firm outcomes (Cabrera-Fernández et al. 2016). Corporate leadership and internal communication have a moderating effect on gender issues (Adams 2016; Fernández-Temprano and Tejerina-Gaite 2020). Future research should focus on the main organisational internal dimensions that may improve gender inclusion and firm performance at the same time (Saitova and di Mauro 2021). What are the main soft skills and practices that increase internal gender equality and external competitiveness? At this point, we posit the following research questions:

- How does internal organisational management improve gender inclusion and firm performance at the same time?
- What are the main soft skills and practices that increase internal gender equality and external competitiveness?

4.4 What about customers?

According to stakeholder management and institutional theory, gender equality policies are very much appreciated and are considered a commitment to the common good (García-Sánchez et al. 2020). This alignment with stakeholders' expectations increases corporate legitimacy (Díez-Martín et al. 2021) and access to economic and human resources (Blanco-González et al. 2020). Research studies have focused mainly on the impact on specific stakeholders such as shareholders and employees (Perrault 2015), ignoring customers. Future investigations should analyse whether gender policies may influence customer behaviours such as purchase intention, brand advocacy, and brand perceived ethicality. Applying behaviour theories (Hegner et al. 2017), researchers could understand the relationship between gender diversity and customer behaviour from a different and novel approach. Therefore, we propose the following research questions for future undertaking:

- Do gender equality policies influence customer behaviours such as purchase intention, brand advocacy, and brand perceived ethicality?
- Is there a relationship between gender diversity in organisations and customer behaviour?

4.5 Wage gap reasons

The gender salary gap is still a global issue (Wang et al. 2019). In most Western countries, for example, access to the labour market and to higher education are variables that may not affect the salary gap as in the past since women are as educated as men (Kleinjans et al. 2017). Many factors have recently been considered key to explaining the salary gap, such as family caring, motherhood, cultural prejudice, and self-esteem. Nevertheless, a deeper analysis of these aspects should be performed to overcome these obstacles and reduce the salary gap. Examples include children's education about equal responsibility in family caring, use of technology to improve flexible working schedules for parents, performance evaluation based on results and not on working hours, cultural prejudice that avoids women's career progress and gender-equal work-life balance opportunities. Therefore, we propose the following research questions:

- Does access to the labour market affect the salary gap?
- Does access to higher education affect the salary gap?
- Which other variables may affect the salary gap: family caring, motherhood, cultural prejudice, self-esteem, etc.

- Could children's education about equal responsibility in family caring reduce the salary gap in the future?
- Does the use of technology to improve flexible working schedules for parents, performance evaluation based on results and not on working hours, and a gender-equal work-life balance opportunity help reduce the salary gap?

4.6 Tangible and intangible assets

Most gender issues research focuses on corporate tangible assets such as financial performance and ROI (Reddy and Jadhav 2019). Nevertheless, there are very important intangible assets, such as reputation, that may be a very relevant source of competitive advantage (Miotto et al. 2020). There are several studies about women's inclusion on boards of directors and their impact on the media and public opinion (de Anca and Gabaldon 2014) and on firm reputation (Bear et al. 2010; Navarro-García et al. 2020), but there is an unfulfilled research gap about other gender issues in business economics and their impact on external stakeholders' opinions and expectations. Gender equality policies, if properly communicated, may be a source of positive reputation and corporate legitimacy (Blanco-González et al. 2020). In this regard, we call for new research on how organisational gender issue management improves tangible and intangible corporate assets:

- Does women's inclusion on boards of directors have a positive impact on the media, public opinion and firm reputation?
- Does gender equality policies impact external stakeholders' opinions and expectations?
- May gender equality policies, if properly communicated, be a source of positive reputation and corporate legitimacy?
- How may organisational gender issues management improve corporate reputation and legitimacy?

4.7 Gender in corporate governance and business ethics

Gender diversity and inclusion, specifically about boards of directors' membership, is one of the most topical corporate governance issues (Nguyen et al. 2020). In terms of corporate governance, it has been demonstrated that there are ethical implications that force women to be included in top management positions (Kagzi and Guha 2018) and that female corporate leaders are more respectful of the legal framework and behave more ethically than men, decreasing the firm's negative exposure (Ben-Amar et al. 2017). Nevertheless, there are few studies that analyse the relationship between gender issues management and business ethics from a broad and comprehensive perspective. Future research could focus on perceived organisational ethicality and business ethics from a firm gender equality strategy and policies perspective:

- What is the relationship between gender issues management and business ethics?
- Are perceived organisational ethicality and business ethics connected with the firm gender equality strategy and policies perspective and how?

4.8 Size and geography matter

Many studies have focused on multinational companies and large corporations. These studies have not considered small and medium-sized enterprises. In addition, few studies have compared different countries and the heterogeneous contexts that may affect gender issues, for example, in terms of legal framework, good governance recommendations and women rights development status. Some countries institutionalize gender quotas in private companies, while in others, girls' right to education is still not ensured.

The priorities in gender issues of some nations are different from others due to institutional and socioeconomic differences (Post and Byron 2015). In this multicultural environment, future researchers should test previously raised hypotheses in new contexts. They should take into consideration different kinds of companies: public and private, large and small, in different industries, and from more and less developed countries. The creation of collaborative networks of researchers from different countries working on gender issues in business economics could be a useful and important project to carry out soon. In this regard, we call for new research on:

- How are gender issues considered and managed in small- and medium-sized companies?
- Is the kind of industry an important variable in terms of gender equality policies?
- Are the priorities in gender issues of some nations different from others due to institutional and socioeconomic differences?
- In the actual multicultural environment, future researchers should test previously raised hypotheses in new contexts.
- How is gender equality perceived in different kinds of organisations, such as public and private, large and small, in different industries, and from more and less developed countries?
- How are gender issues in business economics perceived and addressed in different countries?

5 Conclusions

This paper defines and visualises the intellectual structure of the research field of gender in the business economics literature from 2001 to 2020. The intellectual structure definition is a comprehensive analysis of the domain of a study field; it is a structured way to define the boundaries and the map of a discipline (Hota et al. 2020; Silva et al. 2021; Carayannis et al. 2021). The intellectual structure mapping answers the paper's research question, providing information and details about which are the

most relevant research topics in the gender equality field in the business economics discipline? (RQ1. What are the most influential documents in the field of gender equality in business economics? (RQ2.) What are the sources of knowledge on gender equality in business economics? (RQ3.) How has gender equality research in business economics evolved in the last twenty years? (RQ4.) How are the different topics related to gender equality interconnected? (RQ5.) Which are the most relevant topics that will define the future research agenda in this field? (RQ6.)

To date, there are no other studies of this nature for this research field. Our research complements previous qualitative literature reviews applying a quantitative analysis of large volumes of documents. In addition to the use of a systematic and objective bibliometric methodology, the novelty of this research stands on the broader scope and perspective of the analysis of the research field. Previous papers have focused mainly on specific topics, such as women on boards of executives (Kent Baker et al. 2020) or gender entrepreneurship (Moreira et al. 2019).

This research is based on the quantitative accuracy of a bibliometric review of more than 3000 documents, and its main contribution is the identification of the main research lines, trends and evolution, knowledge sources and extent of gender issues research on business economics. We visualise how the knowledge of this research field is organised, identify past and future challenges, and propose a future relevant research agenda.

The study identifies the most important sources of knowledge on gender issues in business economics from 2001 to 2020 (Supplementary material of Appendix 2). The quantitative applied methodology ensures a high level of objectivity and academic consistency, which provides unique value to the study, being the first one in this field. Previous literature reviews did not achieve such a broad intellectual scope since they were limited by the use of a qualitative and subjective approach (Broadbridge and Simpson 2011) or because they focused only on specific topics, such as gender board diversity (Kent Baker et al. 2020). The paper organization based on research lines is very useful for researchers that may use this structure as a starting point for their investigations. Moreover, practitioners may have an organised and clear idea of the trending topics about gender issues in business economics and a guideline to follow up on these matters.

Our results highlight the main topics and challenges in gender issues research from 2001 to 2020. We could summarise these topics in the following questions: which are the main factors that influence women's access to work? In what environments, industries, sectors and countries does the gender salary gap persist, and what are the main causes of this issue? Are quota policies helpful? How does gender diversity influence company performance and results? How does gender diversity in management positions affect CSR policies, information disclosure and corporate accountability? How does gender inclusion affect innovation and productivity? How do intrinsic variables (risk profile, competitiveness) influence firms' results?

These topics have been combined and organized into 12 large research areas, shaping the intellectual structure of gender equality in the business economics academic field. Some of these lines of research confirm previous literature review results and conclusions. For example, researchers have always focused their attention on women on boards' performance (Cabrera-Fernández et al. 2016; Kent Baker

et al. 2020; Khatib et al. 2021), as shown in cluster #2, and this is one of the most relevant topics in the gender issues field. Top managers and CEOs could use this research to make relevant decisions about their boards of executive composition, taking into consideration the impact of gender diversity and inclusion.

Moreover, researchers have worked to analyse the relationship between gender diversity and CSR policies and information disclosure (Pucheta-Martínez et al. 2018; Amorelli and García-Sánchez 2021), as shown in #4. The gender bias in risk taking attitude and management (cluster #1) have been represented in prior literature reviews and are found to be key factors in entrepreneurship (Moreira et al. 2019). Managers should take into consideration the different gender leadership styles according to the type of industry and strategy. For example, some sectors or positions need a riskier style of decision-making progress, while other environments may need a different kind of emotional and social intelligence in their management teams.

Nevertheless, as a novelty of this bibliometric analysis, we identify new relevant research areas such as the wage gap #9, the effect of the gender differences in competitiveness #7, the consequence of a different risk management on firms' performance #1 (actually the broadest area of research), or the results of gender diversity, not only in the boards of directors but also in the middle management teams #12. To date, middle management has not been considered as important in terms of gender inclusion; nevertheless, in the current competitive and uncertain environment, middle positions need to be cared for as much as top management.

The originality of this bibliometric review also stands on the identification of the main nodes of the knowledge network and connections within gender issues in business economics research. The turning points (Bc papers) highlight the intellectual transition between different research areas. They are useful for enhancing new multidisciplinary and multidimension academic findings and managerial implications.

The burst paper identification (Supplementary material of Appendix 1) highlights the most relevant papers, i.e., the ones that truly focused most of the researchers' attention and interest during a specific timeframe. We could feature the evolution and challenges that researchers have experienced in this field. In the first two decades of the twenty-first century, research trending topics focused on understanding the reason for the gender pay gap (Blau and Kahn 2003; Arulampalam et al. 2007). Since 2010, there has been a proliferation of new topics: gender quotas (Nielsen and Huse 2010; Torchia et al. 2011), performance analysis based on gender (Dezsó and Ross 2012), women and innovation (Díaz-García et al. 2013), and women and competitiveness (Niederle et al. 2013). During the end of the second decade of the twenty-first century, researchers focused their effort to better understand gender firms' performance based on the gender perspective, specifically to comprehend the existence of very different and, sometimes, contradictory academic results and findings on this topic (Seierstad 2016). A very interesting paper about gender and competitiveness is considered a tipping point, identifying the different risk-taking attitudes and management styles between men and women as key factors that may affect organizational competitiveness and performance (Hutchinson et al. 2015). Scholars have recently pointed out that during an uncertainty situation, men and women use different mindsets when assessing organisations (Díez-Martín et al.

2022). Managers should be aware of the importance of gender inclusivity in their teams since the teams' composition and dynamics affect companies' performance and competitiveness.

The analysis of the burst papers also highlights that researchers have overcome some of the main challenges in gender issues since the beginning of the twenty-first century. Currently, research on the gender pay gap and women's access to the labour market is not very relevant. Researchers focus on the gender effects on firms' performance and their causes.

This research provides important implications for business managers, policymakers, and academics. For business managers, improving their knowledge about the effect of integrating gender policies in businesses can encourage them to develop and implement projects to foster corporate operations and improve efficiency. The broader scope and perspective of our analysis enables the improvement of business decisions related to several aspects. Regarding human resources management, the research has demonstrated gender-biased behaviour that can have an impact on organisations' performance. Examples include risk-taking attitude, risk tolerance, risky financial operations, fraud control, chance of survival, and behaviour under competitive or uncertainty environments. This knowledge could be considered in employee selection processes or talent management. In addition, considering the effect that diversity in teams has on firm performance (more gender-diverse teams enhance innovation, tend to disclose more and better-quality information about environmental issues, and have a positive influence on CSR), managers could build and manage teams in a more efficient manner. Moreover, business managers that aim to attract diverse talent should consider that women are less motivated to work in results-driven companies based on objective achievement. Regarding stakeholder management, managers should assume that gender equality management in their company could generate implications related to external perceptions about corporate identity and image. Both variables are evaluated by stakeholders who issue legitimacy assessments.

Policymakers have an important role in ensuring gender equality in every area. In the business field, research papers show that inequality in terms of gender is decreasing. However, a salary gap still exists. This situation involves the need to implement policies to support and incentivise gender equality in companies. Nevertheless, many initiatives implemented by policymakers have not achieved the expected results; in fact, many policies related to the establishment of quotas have been questioned and have proven less efficient in reducing the gender gap. Coercive measures are not reaching the required results. In contrast, the most successful policies have resulted from transformative events based on technological innovations that have improved the lives of families. Policymakers could focus their initiatives and resources on enhancing technological innovations with this purpose. Family (management and care) appears to be a key reason for some gender inequalities, such as the wage gap. Thus, policymakers could favour the development of an institutional context that cares for family issues and that could influence organisational behaviour.

For scholars, this research enables us to improve the existing knowledge of gender equality in the business field. The research agenda may be used for the constitution

of new theoretical frameworks, as a guide for researchers in future projects, a guideline for relevant topics, a source of innovative methodology, and as a list of potential future collaborators.

Finally, this study presents some limitations, as with any bibliometric review based on co-citations. The analysis is comprehensive, but the chosen filters may limit the scope and dimension of the database. Co-citation analysis is biased on older research, which is more likely to be co-cited. Although the results are obtained through quantitative indicators, researchers' interpretations may affect the study's results and conclusions.

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Declarations

Conflict of interest Authors declare no conflict of interest nor ethical issues.

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