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THE PARTICIPATION OF WOMEN ON COMPANY BOARDS: AN ANALYSIS CORPORATE GOVERNANCE FROM A SECTORIAL PERSPECTIVE

A PARTICIPAÇÃO DE MULHERES NOS CONSELHOS ADMINISTRATIVOS DE EMPRESAS: UMA ANÁLISE DA GOVERNANÇA CORPORATIVA PELA ÓTICA SETORIAL

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ABSTRACT

Many countries have implemented public policies to increase female representation on company boards, as economic literature highlights the positive externalities of gender diversity in these bodies. In Brazil, there is no current legislation, and the corporate sector remains predominantly male at the top level. This study aims to analyze the distribution of women on boards by sector and the evolution of female participation among companies listed on B3 from 2010 to 2016. Descriptive analysis was conducted on data from 243 companies (1,922 observations) collected from B3 and CVM to statistically explain the sectoral inclusion of women. Results indicate a gradual increase in female board members, reaching 10.85% by the end of the series, though still far from the 26% average in OECD countries. The "Several" sector (including Chemicals and Educational Services) had the highest female participation at 23.33%, while the Oil, Gas, and Biofuels sector had the lowest at 6.10%. This study aims to build a sectoral panorama of women's distribution on boards and enhance understanding of the need to increase gender diversity in these strategic bodies.

Keywords: gender diversity; board of directors; sectoral analysis.

RESUMO

Muitos países implementaram políticas públicas para aumentar a representação feminina nos conselhos de administração das empresas, pois a literatura econômica destaca as externalidades positivas da diversidade de gênero nesses órgãos. No Brasil, não há legislação vigente, e o setor corporativo continua

predominantemente masculino no alto escalão. Este estudo tem como objetivo analisar a distribuição das mulheres nos conselhos de administração por setor e a evolução da participação feminina entre as empresas listadas na B3 de 2010 a 2016. Foi realizada uma análise descritiva dos dados de 243 empresas (1.922 observações) coletados da B3 e da CVM para explicar estatisticamente a inclusão setorial das mulheres. Os resultados indicam um aumento gradual de mulheres no conselho de administração, chegando a 10,85% no final da série, embora ainda esteja longe da média de 26% nos países da OCDE. O setor "Diversos" (incluindo Produtos Químicos e Serviços Educacionais) teve a maior participação feminina, com 23,33%, enquanto o setor de Petróleo, Gás e Biocombustíveis teve a menor, com 6,10%. Este estudo tem como objetivo traçar um panorama setorial da distribuição das mulheres nos conselhos de administração e melhorar a compreensão da necessidade de aumentar a diversidade de gênero nesses órgãos estratégicos.

Palavras-chave: diversidade de gênero; conselho de administração; análise setorial.

1 INTRODUCTION

Equal opportunities and gender diversity are important social goals that can directly impact the economic development of countries (Browne; Stears, 2005; Duflo, 2012; International Monetary Fund, 2024). Therefore, gender diversity has gained global prominence and has become part of the political and corporate agenda (Diebolt; Perrin, 2013; Hobbler *et al*., 2018). Not surprisingly, the UN included gender equity in the 2030 Agenda, which is in perfect harmony with the best ESG practices (United Nations, 2023). Despite these efforts, we are still far from achieving a balanced situation that represents full gender equality (Bertay; Dordevic; Sever, 2020; Barros; Kirschbaum, 2023), and when we look at female participation in top management positions, the situation is even worse, as these environments are still dominated by men (Ryan; Haslam, 2005; Heemskerk; Fennema, 2014).

In response, several countries have enacted laws to establish quotas for women on boards, including Spain, France, Iceland, Israel, Italy, Norway, and Sweden (Bøhren; Staubo, 2014; Bertrand *et al*., 2019; Maida; Weber, 2019). In Brazil, two bills are currently being debated in the Federal Senate, with no legislation yet in force. The first (Bill No. 112/2010) seeks to establish a minimum number of women on the boards of state-owned enterprises and mixed-economy companies, while the subsequent parliamentary initiative (Senate Bill No. 398/2016) aims to extend the proposal and establish a quota system for women on the boards of all publicly traded companies, not limited to state-owned enterprises (Silva; Margem, 2015; Barros; Kirschbaum, 2023).

Although quotas are justified with the goal of increasing gender equality and developing a "fairer society," it is still unclear whether a higher proportion of women on corporate boards resulting from quotas also leads to better economic and financial performance for companies in these countries. Beyond the legal and normative sphere, the topic of gender diversity on corporate boards is also highly discussed in the academic literature. Researchers focus on the effect of gender diversity among corporate boards on company financial performance and produce mixed results, with some authors finding positive effects of diversity on performance (Liu; Wei; Xie, 2014; Mallidis; Giannarakis; Sariannidis, 2024; Wang *et al.,* 2024; Mukherjee; Krammer, 2024) and others observing negative effects (Bøhren; Strøm, 2010; Ahern; Dittmar, 2012; García-Meca; Santana-Martín, 2023; Kabir *et al*., 2023). Additionally, there are studies that conclude that gender diversity on boards has no impact on company financial performance (Abdullah; Ku Ismail; Nachum, 2016). However, most of these studies face endogeneity issues when attempting to

analyze the isolated effect of the presence of women at strategic levels within companies (Havrylyshyn; Schepker; Nyberg, 2023).

This research aims to answer the following question: **Which sectors have a higher presence of women on boards of directors, and how has the incorporation of gender diversity evolved?** This work is justified by the need to study a contemporary topic, particularly for emerging and Latin American countries such as Brazil. Additionally, there are no studies in the country that investigate this issue from a sectoral perspective. Therefore, it is hoped that this study will contribute to the debate on gender diversity in the corporate environment and stimulate new research that connects this topic of interest with corporate governance, economic performance, and financial performance.

2 LITERATURE REVIEW

Two prevalent theories in the literature explain the importance of companies seeking connections through boards and how their composition can affect companies (Terjesen; Sealy; Singh, 2009; Johnson; Schnatterly; Hill, 2013): Agency Theory, developed by Jensen and Meckling (1976), and Resource Dependence Theory, originally proposed by Salancik and Pfeffer (1978). Although not specifically developed for this issue, both theories provide useful perspectives on gender-diverse boards and will be examined in detail.

2.1 AGENCY THEORY AND RESOURCE DEPENDENCE THEORY

According to Siffert Filho (1998), corporate governance consists of control and monitoring systems adopted by controlling agents to ensure that company managers make decisions that preserve the owners' interests. Boards of Directors are part of this governance framework, serving as restricted teams of influential executives who connect day-to-day managers with shareholders (Monks; Minow, 1995). Members of the Boards influence strategic decisions and ensure the company's goals are met (Krishnan; Park, 2005; Perryman; Fernando; Tripathy, 2016). Therefore, the boards' composition affects how functions and tasks are achieved (Marinova; Plantenga; Remery, 2016). The relationship between board gender diversity and corporate performance can be explained by Agency Theory (Jensen; Meckling, 1976), focusing on its monitoring role, and Resource Dependence Theory (Salancik; Pfeffer 1978), through the diversity introduced by female directors or minority board members, considering their distinct behavioral characteristics compared to male counterparts.

Agency Theory relates to issues arising from the separation between ownership and control due to differing motivations, objectives, information asymmetry, and risk preferences between principals (owners) and agents (managers) (Nassif; Souza, 2013). Agency Theory is based on the argument that the agent has information advantages, affecting the principal because the principal cannot monitor the agent's actions due to information asymmetry. Therefore, conflicts can be mitigated through formal agreements or contracts between the parties, which express rights and duties regarding actions. From this theoretical perspective, having women on the board tends to promote better control mechanisms to ensure the board's duties are met, thus reducing agency costs arising from the separation between management and ownership (Trento; Lachovicz Neto, 2022). Additionally, women on boards often have higher expectations regarding their responsibilities, leading to increased effort and dedication, which contributes to organizational performance (Pucheta-Martínez; Bel-Oms; Olcina-Sempere, 2018). Conversely, Hatch and Stephen (2015) provide strong evidence that women exhibit higher levels of internalized moral identity compared to men.

In this context, a diverse and independent board composition can be crucial for providing

different expertise in monitoring functions, benefiting companies (Korenkiewicz; Maennig, 2024). It is where Resource Dependence Theory intersects with gender diversity on boards and the governance functions described by Agency Theory. According to Salancik and Pfeffer (1978), companies depend on resources from their external and internal environments to survive. Examining the impact of gender-diverse boards on financial and organizational performance reveals that female board members bring valuable resources, whether financial, moral, or ethical.

Bea, Rahman and Post (2010) explored how board resource diversity and the number of women on boards affect corporate social responsibility (CSR) ratings and how CSR influences corporate reputation. They found that CSR ratings positively impacted reputation and mediated the relationship between the number of women on the board and corporate reputation. Recent studies in neuroscience, such as Kansaku, Yamaura and Kitazawa (2000), show that women use both sides of the brain in decision-making processes. In a corporate environment where decision-making is crucial, using both sides of the brain improves decision quality. Studies by Daily, Certo and Dalton (2000), Rose (2007), and Hillman (2015) suggest that women's decision-making processes tend to address a broader range of implications for various stakeholders, impacting areas such as environmental relations and social responsibilities. By relating these two theories, the premise of analyzing gender diversity in boards reveals that female board members perform monitoring functions more independently and are more active in board activities. It could influence the firm's interest variables, such as market value, performance, environmental and social responsibility, and investment returns.

2.2 FEMALE PARTICIPATION IN BOARDS OF DIRECTORS

A significant milestone for gender diversity in boards occurred with Norway's 2003 law mandating female board participation, which led to positive outcomes for corporations. Inspired by these results, countries like Belgium, Spain, France, the Netherlands, Italy, and Malaysia also implemented laws requiring quotas for women in publicly traded companies (IBGC, 2013). Despite advances, gender disparity remains in senior positions even in developed countries. For example, Arfken, Bellar and Hemms (2004) found only modest improvements in board diversity in Tennessee companies from 1995 to 2004. They suggested boards should better reflect their consumer base for improved strategic decisions. In the UK, Singh, Vinnicombe and Johnson (2001) noted a decrease in female board representation from 64% to 58% between 1999 and 2000, with companies having more female directors also showing higher turnover, profits, and employee numbers.

In the U.S., Adam and Ferreira (2009) observed fluctuating female board representation, particularly in consumer sectors, while Bell (2005) highlighted that female executives earn less than their male counterparts. Bertrand and Hallock (2001) found that female executives earn about 45% less than men, partly due to managing smaller companies and having fewer high-level roles. Zelechowski and Bilimoria (2004) found that female insiders in Fortune 1000 companies often held less powerful positions and fewer promotions than their male counterparts, indicating a "subutilization" of women in executive roles that could benefit organizational governance.

In Brazil, research on gender diversity in boards is sparse, with most studies focusing on the impact of female board members (Almeida; Klotzle; Pinto, 2013). Martins *et al.* (2012) identified that board characteristics such as female representation and tenure impacted financial performance in Brazilian banks. Costa, Sampaio and Flores (2019) reported a 50% increase in female representation, yet it remains at around 9% in Brazilian boards. Almeida, Klotzle and Pinho (2013) found no

positive relationship between female board representation and company performance in the energy sector. Barros and Kirschbaum (2023) noted an increase in female board participation from 6% to 10% in Brazil between 1997 and 2015; however, they highlighted that these figures are still lower than those in developed countries, where OECD companies averaged 26% female board members in 2019.

The literature suggests that increasing female board presence can help reduce fraud (Capezio; Mavisakalyan, 2016), enhance transparency (Loukil; Yousfi; Yerbanga, 2020), promote diversity throughout the company, and encourage more women to pursue executive and board roles (Hillman; Shropshire; Canella Junior, 2007). Moreover, having a higher percentage of women on the board may represent one of the main characteristics of the board capable of influencing the capital structure of companies. As García and Herrero (2021) suggest, this characteristic is negatively related to leverage, the cost of debt, and debt maturity. We also find that having a small and independent board with a high proportion of female directors reduces the likelihood of financial distress.

More recently, researchers such as Korenkiewicz and Maennig (2024) have also highlighted the existence of a positive and significant effect of women on the board of directors on product quality, further emphasizing the importance of diversity in board composition and suggesting that modern and high quality products demand a considerable degree of sustainability (monitoring and governance) and a respective communication style and policy, regarding which female board members appear to have an effective role. Table 1 below presents the main results found in the literature regarding the greater presence of women on company boards of directors, and facilitates the understanding of the many possible outcomes.

Table 1 - Literature on the effects of women on company boards

Authors	Results of increased gender diversity on boards
Liu, Wei and Xie (2014); Wang *et al.* (2024), others	Positive effects on company performance.
Bøhren, Strøm and Øystein (2010); Ahern and Dittmar (2012), others	Negative effects on company performance.
Atkinson *et al.* (2003); Capezio and Mavisakalyan (2016); others	Reduce financial fraud and financial risk.
Carter, Simkins and Simpson (2003); Kilic (2015); Kim and Starks (2016)	Increases the value of companies.
Adams and Ferreira (2009); Loukil *et al.* (2020), others	Improves levels of corporate governance and transparency of companies.
Bear, Rahman and Post (2010); Rao and Tilt (2016); Glass and Cook (2017)	Improves corporate social responsibility.
Chen, Leung and Evans (2018)	Promotes greater incentive for innovation.
García and Herrero (2021)	Negatively related to leverage and the cost of debt.
Korenkiewicz and Maennig (2024)	Positive effects on product quality.

Source: research results (2025).

3 METHODOLOGY

To achieve the primary objective of analyzing female participation in Boards of Directors by sector and its evolution from 2010 to 2016, a descriptive analysis was conducted using aggregate and sectoral statistics. The sample comprised 243 companies listed on B3, resulting in 1,922 observations over the period, and included data on all board members, totaling 1,617 women and 13,286 men, as consolidated by CVM. Initially, companies were categorized into 11 sectors according to B3 criteria: Industrial Goods; Communication; Cyclical Consumption; Non-Cyclical Consumption; Financial; Basic Materials; Oil, Natural Gas, and Biofuels; Health; Information Technology; Public Utilities; and Several. The last two sectors cover sub-segments such as Public Utilities (Water and Sewage, and Electricity) and Several (Chemicals and Educational Services).

Data on board composition were extracted from the Reference Forms (FRE) available on the CVM database, specifically from the Administrative Structure section. The FRE is the primary source of information on publicly traded companies, including control structures, financial data, policies, and board composition. Data from B3 and CVM were organized in R software and analyzed using descriptive statistics to examine the distribution of female board members across sectors and the temporal evolution of female representation in top management. This phase focused on firm-level analysis to identify sectoral discrepancies over the specified period. Finally, the Accumulated Variation for the entire period was calculated in order to assess the sectors that had the greatest or least female incorporation over time.

4 ANALYSIS OF RESULTS

Table 1 displays the descriptive statistics for the analyzed data. Over the period studied, there were 1,617 women on boards versus 13,286 men. Female participation in boards overall was 10.85%, consistent with figures observed in Prudêncio *et al.* (2021) and Barros and Kirschbaum (2023).

Table 2 - Descriptive Statistics

Setor	Womens	Mens	Participation	Max	Min	Standard Deviation
Industrial Goods	421	2.767	13,21%	8	0	1,45
Communication	43	351	10,91%	7	0	2,03
Cyclical Consumption	184	1413	11,52%	5	0	1,03
Non-Cyclical Consumption	73	632	10,35%	3	0	0,71
Several	63	207	23,33%	7	0	2,39
Financial	176	2.143	7,59%	3	0	0,70
Basic Materials	223	1.610	12,17%	7	0	1,74
Oil, Gas, and Biofuel	15	231	6,10%	1	0	0,51
Health	59	724	7,54%	4	0	1,03
Information Technology	9	87	9,38%	2	0	0,63
Public Utilities	345	2.964	10,43%	7	0	1,23
Overall Total	1.617	13.286	10,85%	8	0	1,26

Source: research results (2025).

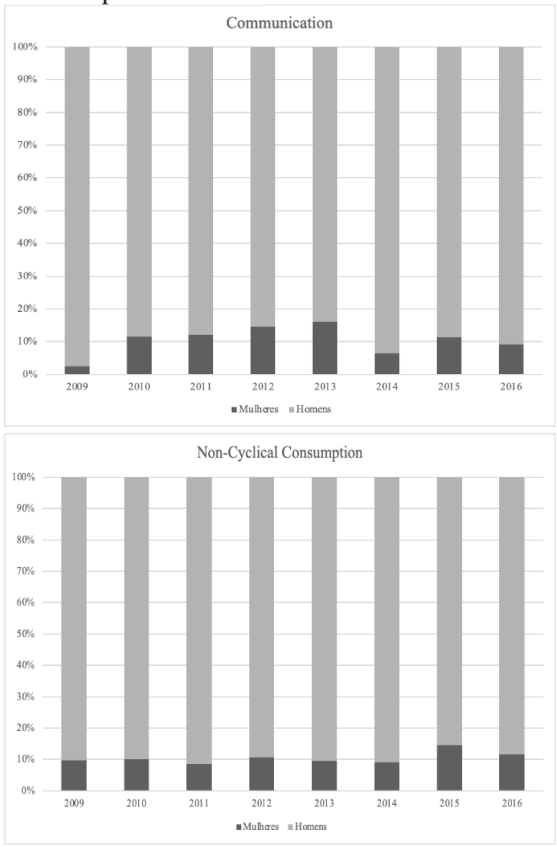
It is evident that the "Several" sector (comprising Chemical and Educational Services segments) had the highest female representation on its boards, with 23.33% of board members being women. Notably, Bahema S.A. stood out with seven (7) board members during this period. In contrast, the "Oil, Gas, and Biofuels" sector exhibited the lowest female representation at just 6.10%. This sector, which includes exploration, refining, distribution, equipment, and services, is predominantly male-dominated. Only Lupatec S.A., Petrobras, and Ultrapar Participações S.A. had at least one female board member, which is 4.75% below the national average.

Overall, other sectors showed female participation close to the total average. Despite not having the highest female representation, the "Basic Materials" sector is notable with 17% of boards comprised of women, thanks to its diverse range of segments, which may encourage greater female participation. The standard deviation analysis indicates that the "Several" sector had the highest variation in female board members, followed by Communication and Industrial Goods. In contrast, the Oil, Gas, and Biofuels, Information Technology, and Non-Cyclical Consumption sectors had the lowest deviations, showing less variation in female representation relative to the average.

The maximum and minimum values should also be noted. The "Industrial Goods" sector had the highest number of women on its board, with Rumo S.A. featuring eight (8) female board members. However, every sector had companies with no female representation on their boards, resulting in some minimum values being zero. To delve deeper into sectoral analysis, the study developed graphs comparing three sectors at a time to illustrate trends in female board representation over time. Graph 1 highlights the Communication, Non-Cyclical Consumption, and "Several" sectors.

In the Communication sector, there were 42 women and 311 men on boards, with a significant decline in female representation over time. For example, in 2010, there were seven (7) women on boards, which decreased to three (3) by the end of the period. The number of male board members decreased from 54 in 2010 to 30 in 2016, indicating a stabilization and then a decline. In the Non-Cyclical Consumption sector, the number of women on boards decreased from 10 in 2010 to 9 in 2016, while the number of men rose to 68 by the end of the period. This discrepancy underscores the need to address gender inequality, as it can adversely affect company development and broader socio-economic dynamics. Even when the number of men decreases, the stable number of women suggests that boards might reduce in size, but still need more female representation.

Graph 1 - Communication and Non-Cyclical Consumption Sectores

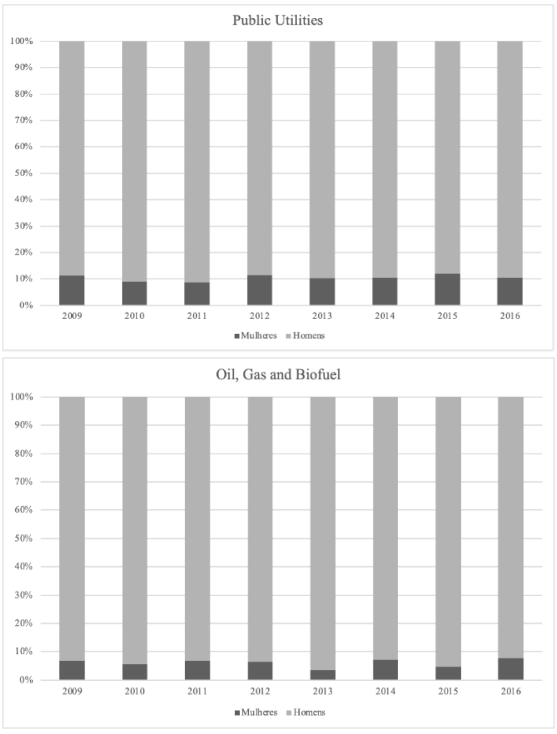


Source: research results (2025).

In percentage terms, female participation on the boards of companies in the Communications sector went from 2.44% in 2009 to 9.09% in 2016, a significant increase, but well below the participation observed in 2013, when the number of women represented 16.07% of the boards. This result is in line with Adam and Ferreira (2009), who found such fluctuations in the incorporation of women on boards, especially in certain sectors. On the other hand, the non-cyclical consumer sector showed a modest percentage variation, going from 9.68% in 2009 to 11.69% in 2016. Arfken, Bellar and Hemms (2004) emphasize that the low increase needs to be developed, which they also observed for the US reality.

Graph 2 condensed information on gender diversity on boards in sectors such as Public Utilities and Oil, Gas, and Biofuels. The Utilities sector began the series in 2010 with 39 female board members. This number decreased to 37 women in 2011 but increased until 2015, when there were 49 women on the boards. However, this number decreased again in 2016, ending the series with 40 women. On the other hand, the Oil, Gas, and Biofuels sector, one of the segments with the lowest female participation on boards, indicates a strong male dominance. For the analyzed period, 2013 had the highest number of women on boards, with a minimum of 3 women across all companies in this sector. Other years varied between 1 and 2 women, values well below the national average. It can be seen from a percentage perspective that the variation is low in both sectors (Public Utilities went from 11.28% in 2009 to 10.47% in 2016, while Oil, Gas, and Biofuels went from 6.67% in 2009 to 7.69% in 2016). Even with the decrease observed, the Public Utilities sector is close to the national average of 10% of boards formed by women, according to Barros and Kirschbaum (2023).

Graph 2 - Public Utilities and Oil, Gas & Biofuel

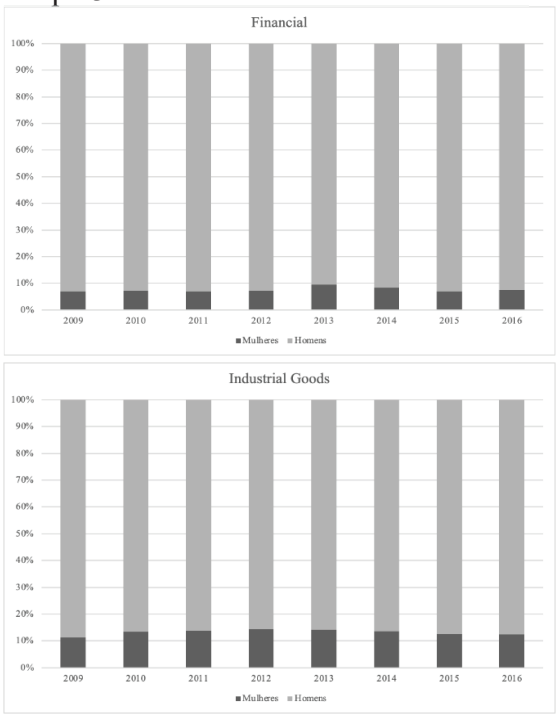


Source: research results (2025).

Graph 3 initially highlights the evolution in the number of male and female board members in the Financial sector, which showed some continuity in the number of women on boards over time (7,02% in 2009 to 7,58% in 2016). The sector started with 22 women and ended with 21 women on boards, a small variation around the average for the period. Graph 3 also shows that in 2013, there was the highest number of women (28), while 2015 recorded the lowest participation, with only 19 women. In the Industrial Goods sector, it is observed that in 2010, there were 56 women serving on boards of directors compared to 361 men. Starting in 2013, these numbers began to plummet, with only 47 women on boards in 2016. It is important to note that from 2012 onwards, the number of men on boards of directors in this sector decreased, from 361 to 330 by the end of the period. In this way, the initial composition of the boards, which had 11.29% women in 2009 and seemed to grow

over time, reaching 14.25% in 2012, began a process of annual decline from then on, reaching a percentage of 12.47% at the end of the series (2016), similar to the beginning of the period studied. This phenomenon can be explained by the reduction in the number of board members during this time, resulting in leaner boards, which is not ideal from a corporate governance perspective. More board members generally improve monitoring functions and decision-making processes within firms, which has also been widely evidenced in the literature (Hillman; Shropshire; Canella Junior, 2007; Low; Roberts; Rosalind, 2015; Kiliç; Kuzey, 2016; Dal Magro *et al*., 2018).

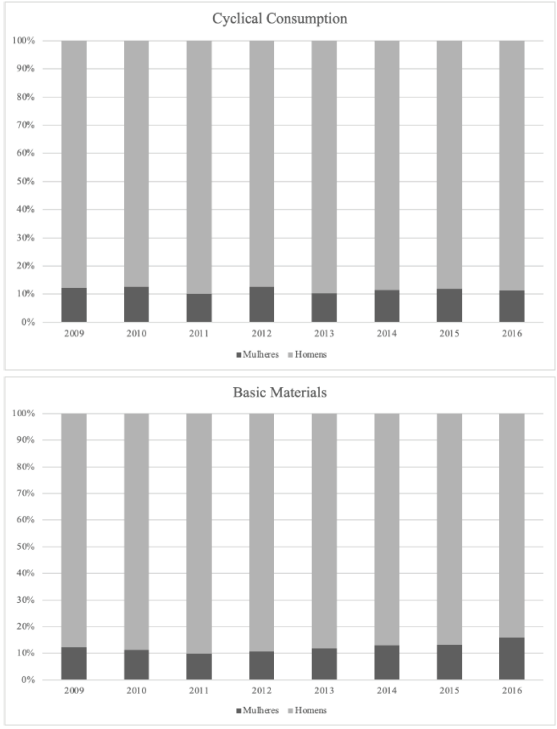
Graph 3 - Financial and Industrial Goods



Source: research results (2025).

Graph 4 shows that the Cyclical Consumer sector experienced a decrease in the number of members over the same period. As shown in Graph 4, the sector initially had 26 women on boards compared to 180 men. By the end of 2016, the numbers were 20 women and 158 men. It is worth noting that in 2013, female participation was only 22 women and 191 men, the highest number of male members during this period. Conversely, the Basic Materials sector saw an increase in the number of women on boards of directors. In 2010, there were 26 women, and by 2016, this number had risen to 36. It is noteworthy that, unlike other sectors analyzed, the Basic Materials sector did not experience a decline in female representation. The 38.46% growth in the number of women on boards between 2010 and 2016 is highly relevant, highlighting that gender diversity has increasingly been considered in this sector over recent years. These sectors are also closer to the national average recorded in other studies, in which the presence of women on the board was approximately 10% (Prudêncio *et al*., 2021).

Graph 4 - Cyclical Consumption and Basic Materials

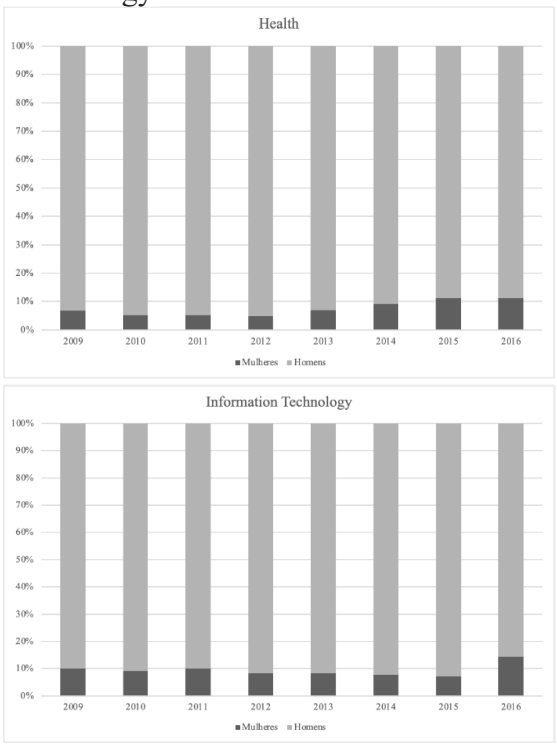


Source: research results (2025).

The Health sector demonstrated an interesting and significant increase in the number of women on boards, as shown in Graph 5. The sector started with only five (5) women on boards and ended with 11, a notable increase

that brings it closer to the national average, an increase of approximately 50% in female participation on boards that was also captured by other studies such as Costa, Sampaio and Flores (2019). Although it is still well below the OECD average (26%), as highlighted by Barros and Kirschbaum (2023). Another sector depicted in Graph 5 is Information Technology (IT), which exhibited the lowest number of women in the sector. It started with one (1) woman in 2010 and remained so until 2015. In 2016, this number increased to 2. Observing the number of men, there was a slight increase from 10 in 2010 to 12 in 2016. Thus, it is evident that both the Oil, Gas, and Biofuels sectors and the IT segment display low gender diversity in senior management boards, reflecting a scenario with significant barriers to female entry and inequality of opportunities.

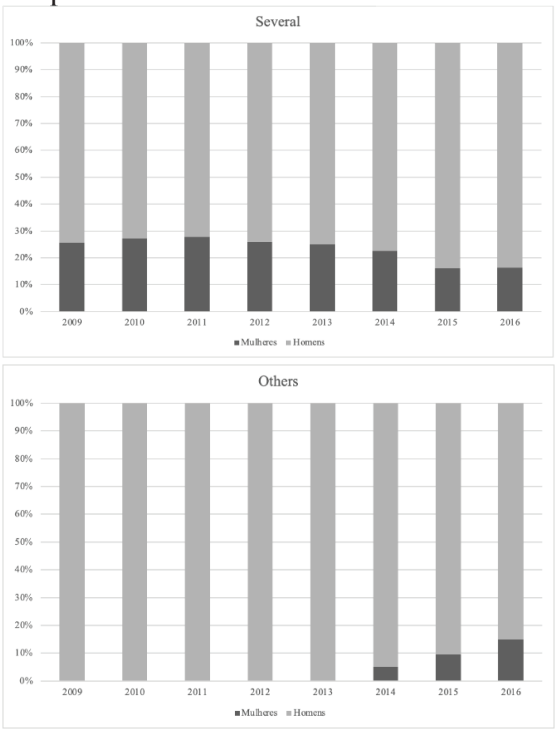
Graph 5 - Health and Information Technology



Source: research results (2025).

The "Several" sector, which had the highest percentage of female board members compared to others, showed an initial increase in female board members from 9 in 2010 to 10 in 2011, but then decreased to 6 by the end of the period. The number of male board members increased from 24 in 2010 to 31 by the end, indicating a trend where men were increasingly taking up the space vacated by women over the analyzed period. Lastly, all other sectors of the economy, which represented only 3.68% of the remaining companies, were grouped under the label "Others." The companies in this group are: Atompar, CCX, Futuretel, Newtel Participações, Sul 116 Participações, Polpar, and Longdis. Graph 3 reinforces the low female participation in these firms, as until 2014, there were no women on the boards, with the number reaching 3 in the last year of the series, while the number of men was 17, indicating a substantial discrepancy (vide Graph 6).

Graph 6 - Several and Others



Source: research results (2025).

Finally, Table 3 illustrates the accumulated variation by sector for the period 2010-2016 and represents the increase/

decrease observed in each sector based on 2010, in relation to the last year. This analysis allows for inferring the accumulated increase or decrease in female participation over the period. In this scenario, it is observed that the Industrial Goods, Communication, Cyclical Consumer, Non-Cyclical Consumer, Several, and Financial sectors all experienced a negative variation, with the Communication sector showing the largest variation at -57.14%.

Table 3 – Accumulated Variation

SECTOR	ACCUMULATED VARIATION (%)
Basic Materials	38,46
Communication	- 57,14
Cyclical Consumption	- 23,08
Financial	- 4,55
Health	120,00
Industrial Goods	- 16,07
Information Technology	100,00
Non-Cyclical Consumption	- 10,00
Oil, Gas and Biofuel	0,00
Public Utilities	2,56
Several	- 33,33

Source: research results (2025).

It is important to consider this since Table 1 showed that the Several sector had the highest female representation on boards; however, this number was higher in the early years of the series and decreased by the end of the period. This negative annual variation of 33% emphasizes that, despite some sectors still having a high number of women, this figure has been declining in recent years. In contrast, the Basic Materials, Health, Information Technology, and Public Utilities sectors showed a positive annual variation, indicating an increase in the number of women on boards from the first to the last year of the series. Finally, it is worth noting that the highest variation occurred in the Health sector (120%), while the Oil, Gas, and Biofuels sector showed no variation, maintaining a minimal number of women on boards and no signs of new female board members being added in this sector.

5 FINAL CONSIDERATIONS

The observed male predominance in top organizational positions and the strong barriers to women's entry into the Brazilian labor market initially prompted this work. Given the need to investigate gender diversity at the top levels of Brazilian companies, this study analyzed the evolution of female presence on the boards of publicly traded companies listed on B3 from a sectoral perspective. In summary, gender diversity on boards is a crucial topic in the debate on corporate governance and equal opportunities. Traditionally, many boards were male-dominated, reflecting a pattern of inequality that could limit innovation and organizational effectiveness.

However, research has shown that including diverse perspectives, including those of women, can bring significant benefits to companies and institutions, such as:

a) diversity of perspectives, heterogeneity of ideas, and improved decision-making;
b) more diverse boards can better reflect the company's customer base, as understanding and addressing the needs of a varied audience becomes a crucial competitive advantage in globalized and diverse markets;

c) having women and other gender identities in leadership positions is an important step towards promoting equality and social justice;
d) diverse boards can help identify and mitigate risks more effectively, enhancing corporate governance robustness. However, despite these benefits, significant challenges remain in achieving gender diversity on boards, including cultural and institutional resistance, lack of inclusive policies, and pressures to maintain the status quo.

The first step to understanding the contemporary scenario is observing the evolution of women's participation on boards over time, which consolidated the central objective of this research. Thus, the results of this study show that there has been progress in female participation on boards, with an average of 10.85% of boards composed of women, far from the reality in other countries. Sectorally, the Several Sector had the highest average female representation on its board (23.33%), followed by the Industrial Goods (19.21%) and Basic Materials (21.17%) sectors. However, when analyzing the percentage variations over time of female participation by sector, it is evident that the Health and Information Technology sectors doubled the number of opportunities for women on boards, which is a positive sign for the corporate environment, especially for these sectors.

Some of the literature suggests that the increase in women in senior management positions will come over time; while another group of researchers emphasizes that this balance of "gender parity" would take a long time to come into effect, and that incentives would need to be created to change the current state of affairs (Handschumacher-Knors, 2023). This work reinforces the need to expand female participation on boards, since they can contribute to raising levels of corporate governance and positively impact the value, performance, and transparency of companies, in addition to reducing risk, fraud, and financial debt of firms.

The evidence presented here contributes to a greater understanding that the presence of women in the networks of Brazilian business elites is still minimal, encouraging the development of new research topics and informing the formulation of public policies aimed at this goal. A limitation of this study was the difficulty due to the unavailability of data for a more extensive and conclusive analysis, which could be addressed in future research.

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