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in Management

Impact of Board Diversity on the Financial Performance of Publicly Traded Companies in Italy

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1. Introduction

Corporate boards sit at the core of the corporate governance system and are designed to monitor management, contribute to strategic direction, and connect the firm to external resources and stakeholders. In this sense, board composition is part of the mechanisms through which firms shape decision-making quality and oversight. A recurring idea in the governance literature is that boards work better when they can avoid "groupthink" and bring different perspectives to the discussion, especially in complex environments where strategic trade-offs are not straightforward. This argument is not limited to gender representation.

It also extends to age diversity in terms of experience, accumulated wisdom, approaches to risk, decision styles. Moreover, it brings on board the cultural elements including international exposure, different professional norms, access to cross-border networks. In practice, these dimensions may matter in different ways. People often view gender diversity as mainly about equity and inclusion, though it shapes oversight practices and awareness of various interests too. Age structure might shape the balance between experience and willingness to adapt. Cultural variety, in turn, can influence the information set and external linkages available to the board, especially vital for companies reaching across nations.

Over the Europe board diversity ranks among the standout issues in governance during recent years, the discussion goes beyond ideals, it touches on actual regulations. Several countries moved from voluntary recommendations to binding rules, especially on gender representation. Italy is a particularly relevant case. With Law No. 120/2011 (the Golfo-Mosca Law), Italy introduced mandatory quotas for women on boards of listed firms and state-owned enterprises, later strengthened from 30% to 40%. As a result, gender diversity in Italy is no longer an "optional" governance practice but part of the institutional setting in which boards are designed and renewed.

Age diversity and cultural variety, on the other hand, rarely face strict regulations. Instead, governance guidelines manage these aspects along with nomination practices and disclosure-based approaches. Recent initiatives at the EU level have increased demands for transparency and tightened how boards select members, but without specifying a particular age composition or a minimum share of foreign directors. This asymmetry is important for interpretation: while the gender diversity in Italy reflects a strong regulatory push, age and cultural composition

come more directly from company decisions. These decisions are shaped by the available skills in the job market and how boards choose to draw on them.

A separate question is whether these differences in board composition have measurable consequences for firm outcomes. Theory provides reasons to expect that diversity may improve board functioning. From an agency perspective, diversity may strengthen monitoring if it reduces social ties and makes boards less likely to fall into passive oversight. From a resource dependence view, diversity can bring broader networks and legitimacy, which can matter for access to resources and reputation. Studies in corporate governance highlight drawbacks as well: more heterogeneous boards may face coordination problems or slower decision-making. That helps to explain why existing empirical evidence is mixed and often depends on the setting and the way diversity is measured.

Against this background, the thesis addresses the following research question:

RQ: How do different dimensions of board diversity (gender, culture and age) relate to financial performance in Italy's largest listed companies?

This thesis studies the relationship between board diversity in terms of gender, age, culture and firm performance for large Italian listed companies during 2015-2024. The focus on Italy is useful for two reasons. First, the quota regime created a clear shift in board composition, so female representation is relatively high compared to countries without mandatory rules. Second, the Italian case also raises the issue of how diversity is implemented in practice, as increases in representation may be concentrated among non-executive directors rather than executive roles. This makes it important to test performance relationships in an environment where diversity is common but may not necessarily translate into influence on daily operations. At the same time, Italy offers a meaningful setting to examine non-quota dimensions of diversity, such as age structure and nationality mix, because these aspects depend more on firm-level selection and may vary across industries and internationalization profiles.

The empirical analysis uses three board characteristics. Gender diversity is measured as the share of women on the board. Cultural diversity is proxied by the share of directors with non-Italian nationality, capturing the idea that international backgrounds can affect information and perspectives at board level. Finally, I consider the age structure of the board through the

standard deviation of non-executive directors. Age is treated as a proxy for experience and decision style rather than "diversity" in the strict statistical sense. The main outcomes are firm performance measures that are standard in the corporate governance literature: accounting-based indicators (ROA and ROE) and a market-based indicator (Tobin's Q).

The dataset is an unbalanced panel of 74 firms listed on Euronext Milan with capitalization more than 1 billion euro (Compartment A), observed at the firm-year level over 2015-2024. Governance information is collected using BoardEx and LSEG Workspace, while financial variables come from Orbis. The core empirical approach relies on OLS regressions estimated separately for each dependent variable, with controls for board size and firm size (log operating revenue). Then extended specifications are estimated, which include a solvency control, given the strong link between capital structure and performance in corporate finance settings.

1.1 Roles and functions of the board

Corporate governance has been a topic of much attention lately, partially because the corporate scandals in recent decades have put the role and functioning of boards of directors in the spotlight.

The board of directors plays a central role in corporate governance by holding the authority to make financial decisions that impact investors' capital, employees' job stability and the economic well-being of communities, as well as guiding executives' power (Molz, 1985). In practice, the board acts as a mediator between shareholders and top management ensuring that managerial choices remain consistent with corporate objectives. For this reason, the way the board is structured, e.g. who sits on it, with which backgrounds and perspectives, is increasingly treated as a determinant of how effectively it can perform these responsibilities, including in terms of board diversity (Zattoni et al., 2023).

Boards, however, are not only a formal link that reacts after decisions have already been taken. They also influence how decision rights are distributed within the firm. By approving major investments, setting the firm's risk tolerance and defining strategic priorities the board effectively draws the boundaries of managerial freedom. This means that board activity extends to the formulation and implementation of strategy (Fama & Jensen, 1983; Jensen, 1993; Adams, Hermalin, & Weisbach, 2010). The point becomes even more important in public companies, where ownership and control are separated and board oversight remains one of the key mechanisms for limiting agency problems (Shleifer & Vishny, 1997).

Boards also have an external-facing institutional role that cannot be reduced to internal control. In public companies, board composition often becomes a signal in itself: it can affect how stakeholders assess the firm's legitimacy and credibility, with potential consequences for access to capital, relationships with regulators, and the company's standing among institutional investors. In line with resource dependence theory, boards can help firms manage environmental uncertainty through boundary-spanning activities, for instance, building connections with key external actors and signalling organisational quality to the market (Pfeffer & Salancik, 1978; Daily, Dalton, & Cannella, 2003; Hillman, Withers, & Collins, 2009). From this angle, board composition can matter even when performance effects are not immediate, because it affects how the firm is positioned in its broader institutional and competitive environment (Johnson, Daily, & Ellstrand, 1996).

Through years, numerous articles have explored the organization of corporate boards (Pfeffer, 1972), their functions (Lavenstein, 1982), and specifically their role in strategic planning (Tashakori & Boulton, 1983). Many studies indirectly ask the question about precise functions of corporate boards, and the answer probably varies depending on the company (Adams, Hermalin et al., 2010). Each board determines the extent of delegation, with most choosing to transfer a significant portion of their decision-making authority (Molz, 1985). At the same time, the literature increasingly converges on the idea that board effectiveness depends in meaningful ways on who sits at the table: diversity among directors' shapes decision-making dynamics and is frequently linked to firm outcomes, including financial performance (Kumar & Zattoni, 2016).

This broader view is consistent with the framework proposed by Bonn and Pettigrew (2009), who describe three core roles of board members. First, directors are responsible for board oversight and control of top management. Second, they contribute to strategic decision-making by influencing priorities and the firm's risk tolerance. Third, they support the organization's access to resources and networks, leveraging their external ties to strengthen the firm's position. These roles are critical as the board is aimed to aligning organizational activities with managerial strategic goals, acting in stakeholders' interests of diverse range (Silva et al., 2024).

These broad roles translate into a set of recurring board functions that appear consistently in the governance literature. First, boards perform a monitoring function by overseeing financial reporting quality, internal controls, and executive conduct. A large portion of this work is

carried out through committee structures (especially audit and remuneration committees), which are designed to strengthen the board's ability to discipline management and reduce information problems (Adams et al., 2010; Jensen, 1993; Dalton, Daily, Ellstrand, & Johnson, 1998). Monitoring also includes core personnel decisions such as appointing, evaluating, and replacing the CEO, as well as succession planning. Succession planning is widely recognized as one of the most significant responsibilities of the board (Kesner & Dalton, 1994; Adams et al., 2010).

2. Theoretical perspective

Several theoretical perspectives explain the role of board diversity.

2.1 Agency theory

The agency theory is a control-based theory that assumes that managers, due to their specialized knowledge and managerial skills, have an advantage over owners who are not directly involved in the day-to-day operations of the company (Dalton et al., 1998). This informational asymmetry can lead to conflicts of interest, where managers may prioritize their own interests over those of the shareholders (Despinoy, 2016).

Within the agency framework, this matters because board diversity is often linked to stronger oversight and accountability. A board that is not uniform in backgrounds and perspectives is less likely to fall into automatic agreement with management's proposals and more likely to challenge assumptions, ask for additional information, and push back when necessary (Zattoni et al., 2023). Empirical work also points in this direction. Recent findings indicate that the presence of women on the board is associated with lower agency costs, suggesting a reduction in the intensity of principal-agent conflict. More broadly, gender diversity has been linked to better information flow within the board and higher decision-making quality, which can limit opportunistic managerial behavior and improve overall firm oversight (Byoun et al., 2016).

Critical mass theory (Kanter, 1977) adds an important nuance by stressing that gender diversity is not just about having a woman on the board, but about how many women are actually there. When representation remains at the level of tokenism, it is harder for women directors to participate on equal footing or to influence the tone of discussions. As their presence reaches a more meaningful level, participation tends to become less constrained and their contribution to board functioning becomes easier to express and harder to ignore. According to Kanter, one

female director often does not have a significant impact on the dynamics of the group. However, when there are three or more women on the board of directors, meaningful participation and changes in the behavior of the board of directors become possible. This "critical mass" argument has been confirmed by subsequent empirical studies.

For example, Torchia, Calabro, and Huse (2011) found that companies with at least three female directors have more active board involvement and improved strategic oversight. Their findings suggest that gender diversity is particularly effective for improving oversight when women occupy a significant place on the board.

The impact of the diversity of the board on the agency's costs also depends on institutional factors. In conditions where external management is weaker, the role of the management board in the field of internal control becomes more significant.

Data from European listed companies indicate that boards of directors composed of representatives of different genders are associated with more reliable control systems and less revenue management, which makes it possible to better deal with conflicts between agencies (García-Meca et al., 2015).

Similar results are reported in emerging markets. Li (2018), for example, shows that in Chinese public companies, where disagreements between managers and state-owned owners can be significant, boards of directors with female directors demonstrate improved control and reduce the level of "tunneling". These results show that diversity can partially compensate for weak institutional governance. Overall, analyzed empirical evidence supports the idea that bringing on board people with different background can reduce information asymmetries and make management decisions more thoroughly.

2.2 Resource dependence theory

Resource Dependence Theory (RDT) highlights the significance of the external environment on organizational behavior and performance. Pfeffer and Salancik (1978) argue that firms cannot be treated as self-contained units: they rely on outside actors for resources that are often essential, such as information, capital, legitimacy, and access to markets. This dependency creates uncertainty, which companies seek to manage through establishing relationships with their surroundings. Board composition, therefore, becomes a strategic decision: companies adapt the composition of their boards to match the complexity of their environment and the demands for resources (Hillman, Withers, & Collins, 2009).

According to the RDT, companies with homogeneous boards of directors may struggle to perform well due to their limited range of skills and experience (Ali, 2014). Board composition becomes strategically important because directors do not only bring formal oversight skills, they also bring human capital and social capital. Who sits on the board shapes the mix of expertise, experience, and connections the firm can actually draw on. Compared to a more homogeneous board, a board made up of directors with different professional and personal backgrounds is more likely to offer a broader set of competences and to open doors to a wider range of networks.

From this perspective, board composition matters not only for internal control, but also for what the board enables externally. Empirical evidence suggests that gender-diverse boards tend to be perceived positively by external stakeholders, particularly in institutional environments where diversity is taken as a concrete sign of modern governance and organisational quality. In practice, a diverse board can act as a reputational signal, strengthening the firm's credibility and, in some cases, making it appear more legitimate in the eyes of investors and other outside stakeholders (Post & Byron, 2015; Terjesen, Sealy, & Singh, 2009).

A similar logic applies to nationality and international backgrounds. Directors with international experience can contribute resources that are difficult to replicate internally: cross-border networks, familiarity with foreign regulatory frameworks, and practical knowledge of market conditions outside the home country. For large, publicly traded firms operating in global industries, these assets may support internationalization choices and improve the firm's ability to manage external complexity. Prior research has indeed linked board nationality diversity to stronger capacity for international expansion and to more effective navigation of demanding environments, with potential implications for firm performance.

At the same time, RDT does not imply that diversity automatically delivers better outcomes. The real question is whether the firm is able to use diversity in a meaningful way within board decision-making. When diversity is treated as symbolic, or when board dynamics discourage minority voices from influencing discussions, the potential resource benefits are likely to remain largely unrealised.

2.3 Upper echelons theory

The Upper Echelons theory explains firm outcomes by focusing on the characteristics of the individuals who make strategic decisions. Hambrick and Mason (1984) argue that the results of organizations - both strategic choices and performance - are partly determined by the background characteristics of senior decision makers. As it is difficult to directly observe cognition, the theory uses demographic and career attributes as indicators of deeper differences in experience, values, and information processing styles (Hambrick, 2007).

The central claim of the theory is not that managers respond mechanically to objective facts, but rather that they interpret the environment through their own "cognitive frames," which influence what they focus on, what they consider feasible, and how they assess risk.

This perspective has been widely explored in later research and has become one of the main ways scholars link leadership composition to strategy and performance. Literature reviews highlight two mechanisms that are particularly relevant.

First, heterogeneity at the top tends to broaden the range of perspectives and knowledge available for decision-making, which can improve problem formulation and the evaluation of alternatives (Carpenter, Geletkanycz, & Sanders, 2004). At the same time, heterogeneity can make coordination more demanding. When people bring different backgrounds and viewpoints to the table, discussions may become more contested, communication can be less straightforward, and reaching a decision may take longer, especially if the leadership team has not developed shared norms or a common way of framing trade-offs (Hambrick, 2007).

This is why Upper Echelons Theory does not point to a single, automatic direction of impact. The expectation is more nuanced: diversity can improve the substance of strategic decisions, but it can also create process losses that reduce those benefits. The net effect depends on how differences are translated into productive debate rather than frictions. Classic studies have shown that the demography of top teams is linked to strategic change and competitive behavior. This is consistent with the idea that background shapes choices, rather than simply reflecting them (Wiersema & Bantel, 1992; Hambrick, Cho, & Chen, 1996).

Although upper echelons theory was initially developed to explain how top managers shape organisational outcomes, its core logic has been treated as a broader behavioural lens for strategic leadership groups. Later contributions explicitly broaden the “upper echelons” perspective beyond the CEO alone by emphasising the role of collective leadership and team composition in shaping strategic choices and firm outcomes (Carpenter, Geletkanycz, &

Sanders, 2004; Hambrick, 2007). Moreover, recent evidence suggests that variations in leadership composition are related to a firm's risk profile and policy decisions. This indicates that who sits at the decision-making table influences how risk is perceived and managed (Bernile, Bhagwat, & Yonker, 2018).

3. Boards' key composition characteristics and their influence on company's performance

The elements that influence the effectiveness of corporate board are considered to be essential components of corporate governance. For a board of directors to work well, a few core features tend to matter more than others. One of them is the composition of the board, not only in terms of formal roles, but also in terms of diversity. This includes demographic attributes such as age and gender, but also differences in professional background, experience and expertise. The basic idea is that a board with a wider mix of profiles is more likely to enrich discussions, improve the quality of decision-making, and strengthen strategic oversight (Walt & Ingley, 2003; Zattoni et al., 2023).

3.1 Independence of a board of directors

Board independence is usually discussed in relation to the balance between executive and non-executive directors and the board's ability to act in the shareholders' interest. The logic is straightforward: if directors are too closely tied to management, it becomes harder for the board to remain neutral when evaluating managerial proposals. Independence, in this sense, rests on the presence of non-executive directors who are not dependent on managers and are not embedded in day-to-day operations.

This is why regulators and governance experts often emphasise the importance of an independent board, typically with a majority of non-executive directors, as a way to support more unbiased oversight and decision-making (Terjesen et al., 2009). In principle, independent directors should devote time and attention to monitoring: they are expected to scrutinise information, ask uncomfortable questions, and challenge management when proposals are not sufficiently justified (Banerjee et al., 2022). Some studies also suggest that independence can be interpreted by the market as a signal of "quality", particularly around IPOs, where stronger board independence has been associated with lower underpricing and, more broadly, better IPO outcomes (Daily et al., 2005; Bell et al., 2012).

At the same time, the empirical evidence is not fully consistent. While independence is often treated as a cornerstone of good governance, findings on its precise impact on firm results remain mixed across studies and contexts (Banerjee et al., 2022; Zattoni et al., 2023).

However, most of the studies focus on typically developed economies such as the United States or, to a lesser extent, the United Kingdom, characterized by liquid markets, dispersed ownership, an entrepreneurial social culture, and relatively strong investor protections. Moreover, some recent studies show a mixed relationship between the number of independent directors and firm's financial performance, meaning that companies with the largest number of independent directors may not necessarily demonstrate higher results (Fuzi, et al., 2016; Crespí-Cladera & Pascual-Fuster, 2014).

Some studies suggest that the importance of board independence may be exaggerated, and an issue of board diversity is potentially more important (Levrau, Van den Berghe, 2007). Furthermore, according to Terjesen et al. (2016) external independent directors do not contribute to firm performance unless the board is gender diversified.

3.2 Size of a board of directors

Numerous scholars in different countries and industries' settings have advocated for smaller boards of directors, highlighting issues with communication and decision-making processes within large boards, that can hinder their effectiveness (Guest, 2009; Kao et al., 2019; Garg, 2007; Yan, 2021). According to Yermack (1996), large industrial U.S. corporations with smaller boards not only more effective and tend to have better financial metrics, but also their CEOs are more incentivized to perform well due to higher compensations. Also, larger boards are often associated with increased agency costs due to potential coordination problems and less efficient oversight of management (Al-Matari, 2022).

Conversely, other research indicates that larger boards can bring a wider array of expertise and resources, potentially enhancing a firm's ability to navigate complex challenges and access critical external networks (Walt & Ingley, 2003). Furthermore, larger and more independent boards provide a more comprehensive understanding of stakeholder concerns and enable companies to effectively pursue their social goals (Zubeltzu-Jaka et al., 2020).

However, Adams and Mehran (2008) did not find any detrimental impact of board size on the financial performance of banks in the U.S.. In fact, their findings indicate a positive correlation between board size and Tobin's Q. They contend that this correlation is due to the fact that

larger boards are more likely to be associated with increased merger and acquisition activity in the U.S. banking sector.

3.3 Diversity of a board of directors

Board diversity, e.g. gender, nationality, age, and other attributes, has become a major concern for big listed firm. This shift has been reinforced by social expectations and governance codes expressed in jurisdictions and regulation. The academic literature on this topic has expanded quickly, but its conclusions are still not fully aligned. Thus, different perspectives have led experts to conclusion that board diversity can have positive, as well as negative or insignificant outcomes. A recent review by professor Zattoni and colleagues notes that inconsistent findings are often explained by differences in how diversity is measured and focus on different outcomes (Zattoni, A., Leventis, S., Van Ees, H., & De Masi, S., 2023). Furthermore, Zattoni et al. (2022) discuss how studies on expertise and ethnic diversity tend to show a positive impact, while other types of diversity might have mixed or partial evidence.

3.3.1 Gender diversity

McGregor (2000) describes the boardroom as a mystical space, expressed by a closed, clubby and "elitist culture" (2000, p. 136). Relying on old-fashioned values and striving for social similarity when appointing a board member often present direct barriers for women and limit their contribution (Walt & Ingley, 2003). In private sector, where the dominance of male cultural norms is coupled with the prevalence of patriarchal values in boardrooms, perpetuates this culture. Directors are often recruited from relatively narrow social and professional circles, which means boards can end up looking very similar in terms of background, career paths, and networks. When that happens, the discussion around the table risks becoming predictable: if everyone shares the same reference points, it is harder to bring in alternative interpretations, spot blind spots, or genuinely challenge management's way of framing issues. Grady (1999) argues that boards need to be more proactive and collaborative; otherwise, firms may miss opportunities to innovate and to create value.

This is where diversity becomes relevant not only as a normative goal, but as a practical input into board work. Studies suggest that boards with a wider mix of ages and genders tend to support stronger strategic decision-making, broaden the firm's organisational networks, and improve the way talent is engaged and retained. In addition, a higher representation of women

on boards has been linked to greater attention to corporate social responsibility and to ethical and social issues, with positive implications for community stakeholders (Ali et al., 2013).

Gender diversity has been the most extensively researched aspect of board composition. Prior research suggests that women appointed to corporate boards are typically not “less qualified” candidates. Evidence indicates that female directors often possess strong human capital and leadership experience, although their board tenure can be shorter on average, partly reflecting their more recent entry into board positions (Hillman, Cannella, & Harris, 2002; Farrell & Hersch, 2005; Adams & Ferreira, 2009).

Evidence on the link between board gender diversity and corporate risk-taking is still not fully settled. Some studies suggest that firms with more women in top decision-making roles tend to adopt more conservative financial policies or take fewer risks. Others, however, find that the relationship becomes weak or disappears once standard firm characteristics are controlled for, and once selection effects are considered—that is, the idea that certain types of firms may be more likely to appoint women to the board in the first place (Faccio, Marchica, & Mura, 2016; Sila, Gonzalez, & Hagendorff, 2016).

Results are more consistent when looking at non-financial outcomes. Boards with higher female representation are often linked to stronger attention to stakeholder-oriented policies and social performance, including CSR engagement and initiatives aimed at reputation and legitimacy. Even here, though, the size of the effect is not universal and tends to vary with the institutional setting and firm-specific context (Bear, Rahman, & Post, 2010; Post & Byron, 2015). For instance, Campbell and Minguez-Vera (2008) found a positive link between female directors on boards and company value (Tobin's Q) in Spain.

Post & Byron (2015) conducted a meta-analysis that revealed a positive average relationship between female representation and accounting-based performance. However, it is important to note that the literature does not imply that gender diversity always leads to improved outcomes. Terjesen et al. (2009) and Post & Byron (2015) emphasize that while there is evidence of positive effects, they do not argue that gender diversity guarantees superior outcomes in all cases. Some studies suggest that gender diversity could lead to increased conflict and reduced communication within the board, potentially worsening corporate social responsibility outcomes (Martínez et al., 2021).

3.3.2 Cultural diversity

Compared to gender diversity, results on cultural diversity are more mixed. The standard argument is that foreign directors can bring cross-border experience, familiarity with different governance systems and knowledge of international markets, which may be particularly useful for firms with an international strategy. At the same time, empirical work keeps coming back to the idea that cultural diversity can be a "double-edged sword".

Masulis, Wang, and Xie (2012) are a good example of the narrower view. They show that foreign directors can add value in very concrete situations, such as cross-border deals, specifically when directors have regional expertise that is directly relevant to the transaction. But the same study also highlights the practical side of having directors who are more distant from the firm's day-to-day context. Issues like lower attendance, information barriers or weaker access to informal channels can reduce their effectiveness. Over time, these frictions can translate into more disagreement and less cohesion in the boardroom, making decisions slower and sometimes less efficient, particularly when the board lacks solid ways of managing conflict and integrating different viewpoints (Zattoni et al., 2022).

Still, it would be misleading to conclude that cultural diversity is "good" or "bad" in general. What seems to matter is how the firm and the board actually handle it. If different perspectives and governance approaches are actively brought into the discussion and incorporated into board routines, cultural diversity can make the board more dynamic and better able to respond to complex environments (Walt & Ingley, 2003). If, instead, diversity remains superficial and foreign directors stay on the margins of information flows, the potential benefits are much harder to realise.

Context also plays a big role, which is why findings do not travel easily across countries. Evidence from Swedish companies suggests that foreign directors tend to be more independent and hold fewer other local directorships (Ruigrok, Peck, & Tacheva, 2007). The authors' broader point is important: diversity management is not only about representation, but about the specific qualifications directors bring and how these fit the institutional setting. For this reason, it would be risky to apply results from one country mechanically to another.

In general, cultural diversity seems most valuable when it matches the firm's strategic needs like international expansion, and when foreign directors are fully integrated into board

discussions and decision-making. Without that integration, the same diversity can generate friction without delivering much in terms of strategic oversight.

3.3.3 Age diversity

Age diversity on boards captures differences in experience, risk preferences, and even in the way directors tend to process information. In broad terms, older directors are often linked to accumulated industry and firm-specific knowledge and, in many cases, a more conservative approach to major decisions. Younger directors, by contrast, are usually described as more open to change, innovation, and new technologies (Hambrick & Mason, 1984; Bantel & Jackson, 1989). When these profiles coexist, an age-diverse board can, at least in principle, draw on a wider set of viewpoints when discussing strategy and when monitoring management. That said, the empirical evidence is far from uniform. Some studies find that greater age dispersion is associated with better innovation outcomes and strategic renewal, partly because mixing age groups can reduce groupthink and make debate more likely (Bantel & Jackson, 1989; Ali, Ng, & Kulik, 2014). Other research points to the opposite risk: age diversity may come with higher coordination costs, more friction in communication, and slower decision-making—especially when boards lack strong leadership or well-established governance routines (Milliken & Martins, 1996; Zattoni et al., 2022). In these cases, the "cognitive" benefits of having different perspectives can be offset by process problems, which helps explain why results sometimes look insignificant or even negative.

For this reason, recent governance literature tends to treat age diversity as a contextual characteristic rather than something that is always beneficial. What matters is not only the level of dispersion, but also whether the board can manage differences in experience and perspective in a productive way, and whether the firm's strategic environment actually requires that mix. In more complex or fast-changing settings, age-diverse boards may be better equipped to balance stability with adaptation. In more stable contexts, the added value of this diversity seems less evident (Ali et al., 2014; Zattoni et al., 2022).

4. Hypothesis development

This study proposes three hypotheses linking board diversity to firm financial performance, based on three theoretical frameworks: agency theory, resource dependence theory, and upper echelons theory. These theories suggest that diversity can lead to improved monitoring and decision-making, but also introduce agency costs, depending on the context and board

processes. Jensen & Meckling (1976), Pfeffer & Salancik (1978), Hambrick & Mason (1984), Hambrick (2007), and Zattoni et al. (2023) all support this idea. Given the focus on large, publicly traded companies in Italy, where corporate governance standards are more formalized and board members are subject to strong market and regulatory scrutiny, it is likely that the benefits of diversity will outweigh any potential costs in terms of performance outcomes.

4.1. Hypothesis 1

Agency-based arguments suggest that gender-diverse boards may strengthen oversight by providing more active monitoring and challenging of management decisions, thereby reducing agency costs (Fama & Jensen, 1983; Adams & Ferreira, 2009). Resource dependence theory adds a complementary angle: gender diversity can also function externally, reinforcing organisational legitimacy and improving access to reputational and relational resources. This channel is likely to be particularly relevant in industries that are highly regulated or highly visible, where stakeholder scrutiny is stronger (Pfeffer & Salancik, 1978; Hillman et al., 2009; Terjesen et al., 2009).

Upper echelons theory provides a further rationale by linking gender heterogeneity to decision-making quality. A board with more heterogeneous perspectives may be better positioned to evaluate alternatives, question dominant views, and ultimately improve the quality of corporate decisions, with potential implications for firm policies and outcomes (Hambrick & Mason, 1984; Bernile et al., 2018). Empirically, evidence across countries on the link between board gender diversity and firm performance remains mixed. Still, meta-analytic results tend to point to a positive association, especially for accounting-based performance measures, while also emphasising that the strength of the relationship varies with the institutional setting (Post & Byron, 2015). In Italy, this contextual element is particularly relevant: the quota-driven increase in female representation appears to have reduced the likelihood of purely symbolic appointments, which may help explain why performance-related effects are more visible in this setting (Bruno et al., 2018). On this basis, I hypothesise that board gender diversity is positively associated with financial performance.

H1: Gender diversity (% of women) on the board of directors is positively associated with firm financial performance (ROA, ROE, and Tobin's Q).

4.2. Hypothesis 2

Cultural diversity can affect a company's performance through access to international knowledge, different perspectives from various institutions, and cross-border networks, i.e. resources that can be beneficial for firms operating in the global market (Pfeffer & Salancik, 1978; Masulis et al., 2012). The upper echelons theory also suggests that directors from different countries may interpret strategic issues in a unique way, potentially improving their ability to evaluate opportunities and risks (Hambrick & Mason, 1984; Carpenter et al., 2004). However, the empirical research also indicates potential drawbacks: foreign directors may have less access to local information networks, and cultural differences can lead to coordination challenges. These effects are likely to vary depending on the specific context (Ruigrok et al., 2007; Masulis et al., 2012). In large-cap Italian companies, many of which operate internationally, the overall outlook remains positive, because international experience and perspectives are likely to be valuable for strategy and management.

H2: Cultural diversity on the board of directors is positively associated with firm financial performance (ROA, ROE, and Tobin's Q).

4.3. Hypothesis 3

Age diversity brings a variety of experiences, time horizons, and approaches to uncertainty to the boardroom, which can influence strategic thinking and decision-making (Hambrick & Mason, 1984). Research on top management teams consistently shows that demographic diversity among senior leaders is linked to differences in strategic direction and competitive behavior (Wiersema & Bantel, 1992; Hambrick et al., 1996), suggesting that background differences can influence strategic choices.

However, organizational studies also caution that diversity can lead to some challenges, such as lower cohesion, slower decision-making, and increased conflict (Milliken & Martins, 1996; Lau & Murnighan, 1998). For this reason, recent governance reviews tend to treat age diversity as potentially beneficial, but its effect depends on how the board works in practice and on the level of organisational complexity the firm faces (Zattoni et al., 2023). In large publicly traded companies, this contingency argument often points in a more optimistic direction. Strategic choices are typically complex, and board work is usually structured through formal procedures and established routines. In that setting, age diversity can support richer discussions and help balance decision-making, rather than simply creating friction, which leads to the expectation of a positive effect.

H3: Age diversity on the board of directors is positively associated with firm financial performance (ROA, ROE, and Tobin's Q).

5. Research methods

5.1 Sample

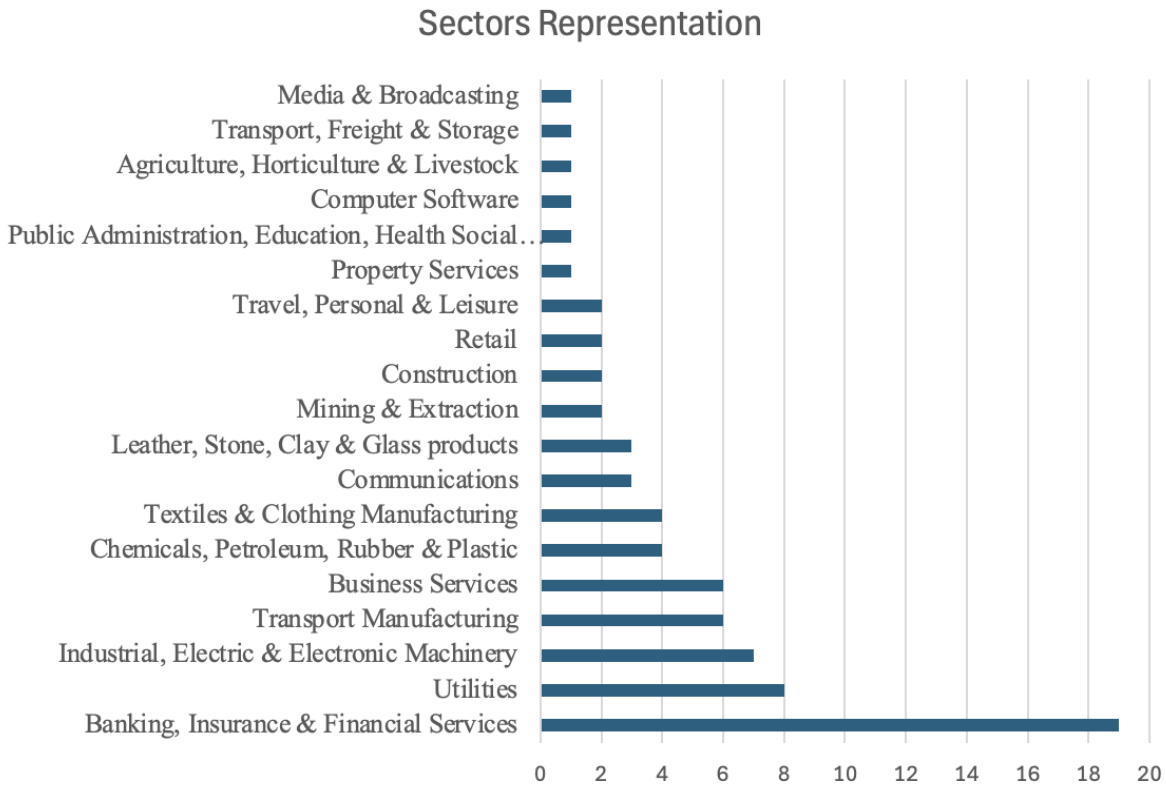
The analysis is based on a sample of largest Italian publicly listed companies traded on the Euronext Milan stock market and includes data for 74 Italian firms of 19 sectors of economy in the period of 2015-2024.

The initial list was derived using the Orbis database, which allows for systematic filtering of firms based on objective criteria. Specifically, companies were selected if they were (i) listed on Euronext Milan and (ii) classified as large-cap firms, defined as having a market capitalization exceeding €1 billion. The list of companies is corresponding to Compartment A, which represents the segment of the Italian stock market composed of the largest and most economically significant listed companies.

The study employs a panel data covering the period from 2015 to 2024, which allows controlling for variables that change over time. This time horizon was chosen to capture both cross-sectional variation across firms and temporal variation within firms, and it is particularly relevant in the Italian context given the progressive implementation and strengthening of gender quota legislation during this period.

Relevant data on board diversity is retrieved from several online sources in order to build the dataset and ensure the most accurate data. Information on gender diversity (measured as the percentage of women on the board) and cultural diversity (measured as the percentage of board members that have a cultural background different from the location of the corporate headquarters) was retrieved from the LSEG Workspace (Refinitiv) database. LSEG provides standardized and regularly updated information on board composition, which enhances the comparability of governance data across firms and over time. Data on board age was obtained from BoardEx database by WRDS, which offers detailed director-level information. Specifically, the age of non-executive directors was extracted for each observation, and then the standard deviation was calculated.. In this way, the use of multiple data sources provides a necessary foundation for the subsequent empirical analysis.

The graph 3.1 illustrates that the most represented sector is Banking & Financial services (25,6% of the population) with relatively mean women representation on board (38,6%) across the analyzed companies. Average age of directors equals 59,2, which is higher than the average across all firms, and representation of other cultures - 12,6%, lower than the average.
Together with Utilities, Industrial and Transport Manufacturing these sectors represent more than 50% of the database.



Graph 1. Sectors Representation

5.2 Italian setting

Over the past decade, diversity on corporate boards has become a major issue in European corporate governance. This is due to regulatory interventions aimed at addressing persistent gender imbalances in leadership positions. Italy is one of the countries that has taken a proactive approach to this issue, with the introduction of Law No. 120/2011 (commonly known as the Golfo-Mosca Law). This law imposed mandatory quotas for women on the boards of publicly listed companies and state-owned enterprises.

This law requires publicly listed companies and state-owned enterprises to allocate at least 30% of board seats to women. The law has since been increased to 40%, marking a shift from voluntary efforts to a more regulated approach. This reform positions Italy as a leader in promoting gender equality in corporate boards.

Using BoardEx data on large listed firms in five European countries (France, Germany, Italy, Spain and the UK) over 2006-2016, Ciavarella (2017) documents that gender diversity increased everywhere, but Italy starts from particularly low levels and then shows a clear acceleration after Law 120/2011. Italy recorded the lowest female representation up to 2012, and after the implementation of the quota law the share of women on boards rises sharply, reaching roughly 29% by the end of 2016, making Italy the second country in the sample after France in terms of women's presence on boards.

Empirical evidence suggests that the Italian quota system has been effective in increasing female board representation, without causing significant disruptions to firm performance or governance quality. Several studies have documented a sharp increase in the number of women appointed to boards after the introduction of quotas, along with improvements in board independence and monitoring intensity (Bianco et al., 2015; Comi et al., 2020).

Concerns about tokenism and women's limited access to executive roles are still very present in this debate. In other words, increasing the number of women on boards does not automatically mean that women have the same influence in boardroom decisions, especially when they are not represented in positions with real executive power (Terjesen & Sealy, 2016). Ciavarella (2017) points to a key feature of the post-reform period: most of the increase in gender diversity has happened among non-executive directors, rather than among executives. By the end of 2016, the gap is clear, at least in Italy, women accounted for about 9% of executive directors, compared with roughly 35% of non-executives. This pattern fits the idea that many firms meet quota requirements mainly through independent/non-executive appointments, while executive positions remain more difficult to access.

At the European level, these national reforms have been reinforced by the Gender Balance on Corporate Boards Directive, adopted in 2022. The Directive sets a common target for large listed companies: by 2026, they should reach either 40% of non-executive director roles held by the underrepresented gender or 33% of all board seats. The broader goal is harmonisation, reflecting the EU's view that voluntary initiatives have delivered uneven results across Member States.

Even with this overall progress, cross-country differences remain substantial. By 2024, women represented close to 40% of board members in countries with binding quotas, compared to around 34% in countries relying on voluntary targets, and only about 17% in countries with no

policy intervention (European Commission, 2022). Among these countries, Italy stands out as having a highly developed regulatory environment that has made gender diversity a standard part of governance.

5.3 Variables

a) Dependent variables

The variables used in this study are constructed following established practices in empirical corporate governance research (Demsetz & Villalonga, 2001; Adams et al., 2010; Wintoki et al., 2012). Firm financial performance is the dependent variable of the study. To avoid relying on a single dimension of performance, both accounting-based and market-based indicators are used in the analysis, which is a common practice in empirical corporate governance studies (Bhagat & Bolton, 2008; Adams, Hermalin, & Weisbach, 2010; Adams et al., 2015).

Accounting performance is measured through Return on Assets (ROA) and Return on Equity (ROE). ROA is widely used as an indicator of operating efficiency and profitability relative to the asset base, while ROE captures profitability relative to shareholders' equity and therefore reflects performance more directly from the owners' perspective (Wintoki, Linck, & Netter, 2012; Adams et al., 2015). Both measures are useful because they provide different perspectives on a company's performance. Governance characteristics may influence these measures differently, depending on factors such as leverage and ownership concentration (Demsetz & Villalonga, 2001; Wintoki et al., 2012).

To complement accounting indicators, the analysis also uses Tobin's Q as a market-based measure. This measure captures the market valuation of a firm relative to its book value of assets and incorporates expectations about future growth opportunities and intangible assets. It is frequently used in corporate governance studies because it reflects investors' perceptions and forward-looking expectations, rather than just 22ealized profits (Demsetz & Villalonga, 2001; Masulis, Wang, & Xie, 2012). Therefore, the combination of ROA, ROE, and Tobin's Q provides a more comprehensive view of a company's performance than any one metric alone.

b) Independent variables

The independent variables represent three dimensions of board diversity: gender composition, cultural background, and age structure. These measures are constructed at the firm-year level and therefore reflect both cross-sectional differences and thin firm changes over time. Board

gender diversity is measured as the percentage of women on the board in a given fiscal year. This continuous measure is preferred to binary indicators because it captures meaningful variation in board composition and aligns with common practice in empirical studies analysing board gender diversity and performance (Campbell & Minguez-Vera, 2008; Post & Byron, 2015; Terjesen, Sealy, & Singh, 2009).

Board cultural diversity is measured by the percentage of directors with non-domestic nationality. Foreign directors may bring different market knowledge, regulatory experience, and external networks, but may also face information disadvantages in domestic institutional contexts, which makes the direction of the effect an empirical question rather than a theoretical certainty (Masulis et al., 2012; Oxelheim & Randøy, 2003).

Board age structure is measured by the standard deviation of age of non-executive directors (NEDs). Age is a relevant demographic characteristic because it reflects accumulated experience and career stage, and it is often linked to risk attitudes and strategic preferences at the top decision-making level (Serfling, 2014; Bertrand & Schoar, 2003). Focusing specifically on non-executive directors is consistent with governance research that distinguishes monitoring and advisory roles from executive management functions (Adams et al., 2010).

I measure the board's age structure using the standard deviation of non-executive directors' age (SD_age). This variable captures how dispersed directors' ages are within the same board-year, and it is a proxy for age heterogeneity in decision-making. A higher standard deviation of age indicates that the board combines directors from different career stages, which may broaden perspectives, risk attitudes and the range of experience available during monitoring and strategic discussions. At the same time, wider age dispersion may also come with coordination costs, for example if directors differ in communication style or preferences over strategic priorities. Using standard deviation of age therefore allows the analysis to test whether boards with more heterogeneous age profiles are associated with differences in firm performance.

c) Control variables

Control variables are included to account for firm-specific characteristics that may influence financial performance independently of board diversity, thereby reducing the risk of variable bias. The control variables employed in this study relate primarily to firm characteristics and

board structure, which prior literature has consistently identified as key determinants of corporate performance.

Firm size is controlled for using the logarithm of operating revenue. Firm size is a fundamental control variable in governance performance studies because larger firms typically differ from smaller firms in terms of organizational complexity, market visibility and resource availability (Bhagat & Bolton, 2008; Coles, Daniel, & Naveen, 2008). Larger firms often benefit from economies of scale and greater access to capital markets, but they may also face coordination inefficiencies and lower growth potential, which can affect both accounting-based and market-based performance measures. The logarithmic transformation of operating revenue is applied to limit the influence of extreme values, as commonly recommended in empirical studies (Wintoki et al., 2012). Data on operating revenue were obtained from the Orbis database.

Board size, measured as the total number of directors sitting on the board, is included as a structural governance control. Board size is relevant because it may influence the effectiveness of board deliberations, monitoring intensity and the diversity of expertise available within the boardroom. Prior research suggests that larger boards may suffer from coordination problems and slower decision-making, while smaller boards may lack sufficient breadth of knowledge and resources (Yermack, 1996; Adams, Hermalin, & Weisbach, 2010). Information on board size was retrieved from the LSEG database.

5.4 Analysis

The analysis was conducted on the dataset of Italian publicly traded companies listed on Euronext Milan and belonging to Compartment A. The database was built in Excel, then it was imported to SPSS Software to conduct statistical analysis.

Starting from the list of eligible firms, data were collected for each company on an annual basis over the period 2015-2024. The unit of observation is the firm-year. This analysis adopts an unbalanced panel structure. Board-level variables, particularly those related to diversity and directors' characteristics, are not always available for every firm and every year, as board composition typically changes only upon board renewal and information disclosure may vary across time. Rather than eliminating firms with partially missing observations, all available firm-year observations were retained in order to preserve sample size and avoid a substantial loss of information.

The use of an unbalanced panel is consistent with prior empirical corporate governance research and is particularly appropriate in contexts where governance data are intermittently observed (Wintoki et al., 2012). Missing values are treated as such and are not replaced or interpolated. As a result, each regression model is estimated using the maximum number of available observations for the variables included in that specification. Prior to estimation, the dataset was screened for data consistency.

The empirical strategy relies on ordinary least squares (OLS) regression models, while accounting-based and market-based indicators were analyzed independently to avoid mechanical correlations between dependent variables. All independent and control variables are entered simultaneously in the regression models.

6. Results

6.1 Descriptive statistics

Table 1 reports descriptive statistics for all variables used in the empirical analysis (number of observations, minimum-maximum values, means, and standard deviations), providing a first overview of board characteristics and performance outcomes in the sample.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
women_on_board	505	8.333	60.000	38.99965	7.810871
cultural_div	262	5.263	66.667	15.82027	12.793040
SD_age	501	2.690	16.860	8.60519	2.608814
ROA	711	-29.342	23.210	3.62871	5.265255
ROE_w	711	-49.325	45.947	11.19297	13.577864
tobins_q	658	.000	7.635	.85822	1.108624
board_size	520	3	25	11.89	3.026
ln_op_revenue	711	7.054	18.785	14.36256	1.632151
Valid N (listwise)	205				

Table 1. Summary of descriptive statistics computed through SPSS Statistics

With respect to gender diversity, the average share of women on boards is about 39%, with values ranging from 8.33% to 60%. The variable is observed for 505 firm-year observations, which makes the gender measure usable for the main multivariate models without an excessive

loss of observations. The standard deviation is around 7.8%, suggesting sufficient cross-sectional and time variation to test associations with firm performance.

The analysis uses an age dispersion measure - SD_age (standard deviation of non-executive directors' age). SD_age is available for 501 observations, ranging from 2.69 to 16.86, with an average of 8.6. This indicates that some boards are relatively homogeneous in age, while others combine directors from noticeably different age ranges.

Turning to firm performance, ROA is observed for 711 firm-year observations and shows heterogeneity across years and companies, including negative values, consistent with the presence of loss-making firm-years in the panel.

ROE exhibits extreme values, which is expected when equity is small or negative. To limit the influence of extreme values that often arise when equity is very small or negative, ROE is winsorized at the 1st and 99th percentiles and used as a robustness dependent variable.

Regarding market-based performance, Tobin's Q shows a wide distribution with a mass around values below 1 and a smaller number of high-valuation observations

Among control variables, board size is observed for 520 observations, with boards ranging from 3 to 25 members and an average close to 12 directors, which aligns with the typical governance structure of Italian listed firms. Firm size, proxied by the logarithm of operating revenue (ln_op_revenue) exhibits substantial dispersion, reflecting meaningful differences in scale across firms.

6.2 Correlation analysis

As a preliminary step, Pearson correlation coefficients were computed to examine the bivariate relationships between board diversity indicators, firm performance measures, and control variables. This analysis provides initial insights into the direction and strength of the associations between the variables of interest, and allows for a preliminary assessment of potential multicollinearity. The correlation matrix does not raise concerns about multicollinearity among the variables, as all the correlations remain below commonly used thresholds.

Starting from gender diversity, women_on_board shows very weak correlations with performance. The correlation with ROA is small and not statistically significant, while the correlation with Tobin's Q is essentially zero. By contrast, women_on_board has a small positive correlation with ROE_w, which is statistically significant, although the magnitude

remains modest. Taken together, these patterns suggest that any relationship between gender representation and performance is unlikely to be strong in bivariate terms and should be interpreted through multivariate models that account for firm characteristics.

SD_age is positively correlated with ROA and Tobin's Q, and both relationships are statistically significant, though again small in magnitude. In contrast, SD_age has no meaningful correlation with ROE_w and is negatively correlated with women_on_board, indicating that boards with higher female representation tend to display slightly lower age dispersion in this sample.

As expected, the three performance measures are strongly related to each other. ROA and ROE_w show a high positive correlation, reflecting their shared accounting basis. Tobin's Q is also strongly positively correlated with ROA and moderately correlated with ROE_w, indicating that market valuation and accounting performance move together to some extent, while still capturing different dimensions of firm outcomes.

Regarding controls, board_size has statistically significant negative correlations with all three performance indicators, and a positive correlation with firm size (ln_op_revenue). This is consistent with the idea that larger boards are more common among larger, more established firms. ln_op_revenue is negatively correlated with ROA, ROE_w and Tobin's Q, suggesting that scale effects may influence both accounting profitability and market valuation in this sample.

The correlation analysis reveals limited direct associations between board diversity measures and firm performance, emphasizing stronger relationships between performance indicators and variables related to firm size.

Table 2. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11
women_on_board (1)	1										
cultural_div (2)	0,050	1									
SD_age (3)	-.178**	-0,010	1								
ROA (4)	0,035	.218**	.108*	1							
ROE_w (5)	.092*	0,090	-0,002	.735**	1						
tobins_q (6)	-0,008	.125*	.138**	.762**	.407**	1					
board_size (7)	-.127**	-0,061	0,012	-.155**	-.111*	-.227**	1				
ln_op_revenue (8)	0,017	0,060	-0,077	-.254**	-.161**	-.330**	.263**	1			
ROCE (9)	0,068	.239**	.171**	.901**	.859**	.634**	-0,064	-.112*	1		
profit_margin (10)	0,073	-0,121	-0,052	.396**	.656**	.127**	0,027	-.232**	.586**	1	
solvency_ratio (11)	-0,040	.251**	0,076	.544**	0,067	.560**	-.245**	-.413**	.293**	-0,042	1

Notes: Pearson correlations. **, * denote significance at 1%, 5%,. N varies by pair (pairwise deletion).

6.3 Regression Results

ROA

In this section ordinary least squares (OLS) regression models is used, including board-level diversity indicators such as the percentage of women on the board, and SD_age, as well as board size and logarithm of firm operating revenue, as control variables.

The regression is statistically significant overall ($F = 12.308$, $p < .001$) and is estimated on 397 firm-year observations. This indicates that the included explanatory variables together explain a meaningful portion of the variation in firm profitability. However, the adjusted R^2 value of 0.103 suggests that accounting performance is influenced by other factors beyond board characteristics.

In terms of the main variables of interest, women_on_board does not show a statistically significant association with ROA ($p = 0.446$). Similarly, SD_age has a positive coefficient but remains statistically insignificant at conventional levels ($p = 0.110$). Board size is also insignificant and slightly negative, which is directionally consistent with coordination-cost arguments but not supported by the values in this sample.

Regression results (OLS)

Variables	Model (1) ROA	Model (2) ROE_w	Model (3) Tobins_Q	Model (4) ROCE	Model (5) Profit_margin
women_on_board	0.026	0.183*	0.003	0.143*	0.085
cultural_div				—	—
SD_age	0.172	-0.067	0.052	0.260	-0.563
board_size	-0.086	-0.101	-0.028	-0.286	0.682**
ln_op_revenue	-0.993***	-2.146***	-0.277***	0.444	-5.071***
solvency_ratio	—	—	—	0.269***	-0.137***
Constant	16.596***	37.670***	4.756***	-10.441	90.074***
N	397,000	397,000	377,000	289,000	393,000
Adj. R^2	0,103	0,063	0,175	0,185	0,141
F-test p-value	<0.001	<0.001	<0.001	<0.001	<0.001

Unstandardized coefficients (B). * p<0.10, ** p<0.05, *** p<0.01.
Standard errors in parentheses. Models estimated using listwise deletion.

Table 3. Regression results obtained though SPSS Statistics

The strongest result in the ROA regression concerns firm size. ln_op_revenue has a negative and highly significant coefficient ($p < .001$), indicating that larger firms with higher revenues tend to have lower ROA. The result may be due to scale effects, where larger firms have lower returns on assets because of capital intensity or more mature operational structures.

Table 3 presents the OLS regression results with ROA as the dependent variable. Additional output produced by SPSS, such as model fit statistics (R^2 and adjusted R^2) and the F-test of joint significance (ANOVA), as well as extended collinearity diagnostics are provided in Appendix.

ROE

Table 4 presents the regression results with ROE_w as the dependent variable. The model mirrors the ROA specification. Overall regression is statistically significant ($F = 3.705$, $p = 0.006$) and is estimated on 397 firm-year observations. However, the explanatory power remains limited (adjusted $R^2 = 0.026$).

In contrast with ROA, women_on_board becomes relevant in the ROE_w model, as the coefficient is positive and borderline significant ($p = .0052$). While this does not meet the conventional 5% threshold, it suggests a weak association between higher female representation and equity returns once basic controls are included. SD_age and board_size are not statistically significant.

The size of the firm is again important in this model. The ln_op_revenue variable is negative and statistically significant ($p = 0.001$), indicating lower ROE_w among larger firms in the sample. This finding is consistent with the observed correlation patterns and supports the idea that scale and maturity effects play a significant role in determining equity-based profitability in this context. However, the relatively low adjusted R-squared suggests that other factors, such as capital structure decisions and firm-specific events, also influence ROE_w and are not fully accounted for in the model.

Tobin's Q

Tobin's Q is used to capture market-based performance, as it reflects investors' valuation of the firm relative to its asset base and incorporates expectations about future growth opportunities. The model includes the same set of explanatory variables as in the accounting-

based specifications. This allows a direct comparison between accounting-based and market-based outcomes.

The Tobin's Q regression is statistically significant overall ($F = 14.281$, $p < .001$) and is estimated on 377 firm-year observations. The model shows a higher explanatory power than the ROA and ROE_w specifications, with an adjusted $R^2 = 0.123$.

In this model, women_on_board remains statistically insignificant ($p = .865$), indicating that differences in female representation are not associated with Tobin's Q within this sample once controls are included.

By contrast, SD_age is positive and statistically significant ($p = .025$). This result suggests that boards with greater age heterogeneity tend to be associated with higher market valuation, potentially reflecting that a broader mix of experience and perspectives is valued by investors or contributes to decision-making quality in ways that are reflected in market expectations. Board size is not significant and displays a weak negative coefficient.

As in the accounting models, ln_op_revenue is the most robust determinant in the specification: it is negative and highly significant ($p < .001$). This indicates that larger firms tend to have lower Tobin's Q ratios, consistent with the standard interpretation that mature firms have lower growth expectations and therefore lower market-to-asset valuations compared to smaller firms.

6.4 Supplementary regressions: cultural diversity (reduced sample)

Regression results (OLS)

Variables	Model (1) ROA_cd	Model (2) ROE_w_cd	Model (3) Tobins_q_cd
women_on_board	0.024	0.126	0.000
cultural_div	0.038	-0.045	0.009
SD_age	-0.029	-0.534	0.037
board_size	-0.029	-0.153	-0.012
ln_op_revenue	-0.727***	-1.724***	-0.294***
Constant	12.803**	38.083***	4.920***
N	214,000	214,000	205,000
Adj. R^2	0,027	0,024	0,136
F-test p-value	0.056*	0.076*	<0.001

Unstandardized coefficients (B). * p<0.10, ** p<0.05, *** p<0.01.

Table 4. Regression results obtained though SPSS Statistics

Due to the limited availability of cultural diversity data for a subset of firm-year observations, all models in this section were estimated on a restricted sample with cultural diversity available. As a result, the effective sample size was significantly smaller than in the main regression, and the findings should be interpreted as additional evidence.

The empirical model follows the same structure as the baseline model, including cultural diversity alongside other board variables and control variables. Consistent with the descriptive analysis, the regressions on the restricted sample used 205 firm-year observations.

Across all three performance measures, cultural diversity did not have a statistically significant effect. While the estimated coefficient was generally positive, it did not reach conventional levels of significance, suggesting that there is no consistent association between nationality diversity and accounting profitability or market value.

Among the control variables, ln_op_revenue continues to be negatively associated with performance, in line with the patterns observed in the full-sample regression. It indicates that the size effect is not solely driven by sample composition. However, the explanatory power of the models remains limited and the coefficients for the board variables are generally unstable compared to the main specifications. This reinforces decision to treat cultural diversity as a supplementary rather than a central aspect of empirical strategy. Overall, the restricted-sample analysis does not provide evidence that cultural diversity has a direct relationship with firm performance in this dataset.

6.5 Extended model

The baseline regression focuses on board characteristics and a standard size control. However, firm performance is also shaped by firm fundamentals, especially capital structure. To make the results closer to the corporate governance setting and to reduce the risk that baseline coefficients capture omitted firm-level factors, I estimate an extended specification that adds a financial control for solvency (asset-based solvency ratio).

Finally, I complement the extended analysis with two alternative accounting-based performance measures, ROCE and Profit margin. These outcomes are included as robustness checks and in order to address the limitations of ROE, which is highly dispersed in the sample and therefore harder to interpret. ROCE and Profit Margin capture operating performance from different angles (capital efficiency and operating efficiency), allowing for more complete assessment of the results.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
women_on_board	505	8.333	60.000	38.99965	7.810871
SD_age	501	2.690	16.860	8.60519	2.608814
board_size	520	3	25	11.89	3.026
ln_op_revenue	711	7.054	18.785	14.36256	1.632151
solvency_ratio	701	1.258	88.034	31.99968	21.357425
ROCE	505	-45.159	48.238	11.25954	10.309602
profit_margin	692	-96.388	73.191	15.91289	18.590682
Valid N (listwise)	285				

Table 5. Summary of descriptive statistics for the extended model computed through SPSS Statistics

When additional variables are included in the model, the number of firm-year observations drops because SPSS applies listwise deletion. In my dataset, cultural diversity is discussed only in the baseline analysis, while the extended models focus on specifications that allows to retain a larger and more representative sample.

ROCE (extended)

The model is estimated on 289 firm-year observations and is statistically significant overall ($F = 14.039$, $p < .001$). The explanatory power is moderate ($R^2 = 0.199$; adjusted $R^2 = 0.185$), which is reasonable given that ROCE is driven by both operational performance and financial structure.

The strongest result relates to the financial structure of the company. The solvency ratio has a positive and highly significant coefficient ($B = 0.269$; $\beta = 0.461$; $p < .001$), indicating that companies with stronger balance sheets tend to generate higher returns on operating capital. This finding is consistent with the idea that lower financial pressure and reduced risk of distress can support operating performance by reducing financing constraints and distress-related costs. Another interesting point is that the presence of women on the board is borderline significant and positively associated with ROCE, although the evidence is weak ($p = 0.059$). This suggests that there may be a positive association between gender diversity and company performance. Age heterogeneity does not seem to be clearly linked to ROCE once financial controls are taken into account.

Finally, board_size enters with a negative sign but is not statistically significant (p = 0.170). While the finding is consistent with the coordination-cost view discussed in governance research (Jensen, 1993), the estimate does not support a robust effect in this sample. Firm size (ln_op_revenue) is also not significant in this specification.

Profit Margin (extended)

Table 12 presents the extended OLS regression analysis with profit_margin as the dependent variable. The model was estimated using 393 firm-year observations, and it is statistically significant overall ($p < .001$). The explanatory power of the model is moderate ($R^2 \approx .13$, adjusted $R^2 \approx .12$), as profit margins are influenced by various factors, including operational and industry-specific ones, that are not fully reflected in the governance variables.

One of the most significant findings is related to firm size. The coefficient for ln_op_revenue is negative and highly significant ($p < .001$), suggesting that larger firms in our sample tend to have lower profit margins. This could be due to various factors such as a business model that focuses on volume rather than margin, higher organisational complexity, or the maturity of the firm.

The solvency ratio coefficient is negative and statistically significant (p = 0.004), suggesting that within this sample, higher solvency is associated with lower margins. This may be due to the fact that profit margin captures a narrow operational ratio and reacts differently to balance sheet structure and industry composition.

Among the board variables, neither women on board nor SD age is statistically significant. However, board size is positive and significant (p = 0.019), indicating that firms with larger boards tend to have slightly higher margins. This result contradicts the standard coordination cost argument but may reflect the fact that larger Italian board members can provide broader expertise which is relevant for margin management and operational oversight.

7. Discussion and conclusion

This thesis is to examine whether board diversity is associated with firm performance in the Italian listed context over 2015-2024, using a firm-year dataset and OLS specifications based on three diversity proxies (women on board, cultural diversity, and standard deviation of age of non-executive directors) and standard controls. The descriptive evidence already suggests a particular institutional setting: female representation is relatively high on average (38.9%),

while cultural diversity and age diversity is both lower on average and available only for a smaller subset of observations.

7.1 Baseline results

Overall, the results from the baseline regressions using ROA, ROE_w and Tobin's Q show that board composition variables do not have a strong or consistent relationship with performance when basic firm-level controls are taken into account. In the ROA model, neither the proportion of women on the board nor the proxy for age heterogeneity are significant, and the outcome of the model is mainly determined by firm size. This pattern also holds for Tobin's Q, where gender representation is insignificant and the model still emphasises firm fundamentals rather than board characteristics.

For ROE_w, the results are slightly more complex but still not conclusive. The coefficient for women_on_board becomes borderline, which suggests a weak association between female representation and equity-based profitability when controls are added. However, the evidence is not strong enough to consider it a clear effect.

Previous studies have reported that the impact of board composition on performance is often small, dependent on the specific context, and can vary depending on the modeling approach and measurement methods used (Adams & Ferreira, 2009; Bhagat & Bolton, 2008; Terjesen et al., 2015). While a lack of statistical significance may not necessarily indicate that board composition has no impact, it could suggest that traditional performance metrics may not be the most direct channel through which the effects of board characteristics are measured.

A further point arising from the baseline analysis relates to data availability. There is “cultural diversity” metric availability for a much smaller number of firm-year observations compared to other variables, which becomes an issue when additional controls are introduced.

7.2 What changes brings the extended model

The extended specifications are useful primarily because they shift the "story" of the regressions from a purely governance perspective to a more realistic corporate finance context. Once a balance sheet indicator is introduced, the models consistently lead to the same conclusion: performance is closely linked to firm fundamentals, and any connection between board demographic features and performance become more difficult to detect. Much of the governance literature has long argued that firm performance is primarily driven by underlying economic factors - industry position, business model, and financial structure - while board

characteristics often have less significant, indirect, or conditional impacts that may not be reflected in standard measures of profitability or valuation (Bhagat & Bolton, 2008; Adams & Ferreira, 2009).

From an agency theory perspective, the introduction of financial structure controls is important because the capital structure itself influences incentives and monitoring needs. Companies that face higher financial pressure may have tighter constraints and different risk profiles, which can affect both accounting returns and market value, regardless of board composition. Adding solvency improves the interpretation of board coefficients. Without this, some of what might appear to be a "governance effect" could simply reflect differences in financial stability across companies. This point is closely related to the broader concern in governance research that board variables can be correlated with unobserved firm characteristics and are therefore sensitive to omitted-variable bias (Himmelberg et al., 1999; Demsetz & Lehn, 1985).

What is also notable in the extended analysis is that the lack of significant effects for the diversity measures becomes more consistent across models. This pattern again aligns with studies showing that demographic diversity at the board level does not automatically translate into higher profitability or valuation, especially when diversity is measured with broad indicators (e.g., share of women, age, cultural mix) rather than actual influence, committee roles, or executive representation (Adams & Ferreira, 2009; Terjesen et al., 2016).

A natural question is why gender diversity does not appear to “move” performance in these estimates, especially given the strong regulatory push in Italy. A possible interpretation is that in quota contexts, where many firms are converging on similar levels of gender representation due to compliance regulations, the remaining variation in diversity may be too small to generate a significant cross-sectional performance effect. In this way, gender diversity has become a governance baseline rather than a differentiating feature among listed firms. Average female representation is already close to 40%, and many firms cluster around similar compliance-friendly levels.

ROCE and Profit Margin were added as the additional dependent variables mainly to make sure that the conclusions do not depend on one specific performance measure. In the baseline and extended models, ROE is the most problematic variable: it is very dispersed and can change a lot because the equity denominator moves, not necessarily because the firm’s

operating performance changes. ROCE is useful because it is typically more stable than ROE and it captures operating performance without being as sensitive to extreme equity values.
Profit Margin captures a different dimension, as it focuses on operating efficiency and pricing power, and it is often easier to interpret because it is not driven by balance-sheet structure in the same way as ROE.
Using these two alternative outcomes, the overall picture remains similar to what was found with ROA and Tobin's Q. Firm fundamentals still matter more than board composition, and the diversity variables do not show consistent performance effects. This is also in line with the broader governance literature, which often finds that board characteristics can matter for how boards work, but that translating this into clear changes in financial performance is not guaranteed and depends heavily on context and measurement (Adams & Ferreira, 2009; Terjesen et al., 2016).

7.3 Main limitations and suggestions for further research

This thesis has some key limitations that could point to areas that could use be improved in future work.
Firstly, the empirical approach relies on pooled OLS regressions which doesn't fully address the endogeneity issues common in corporate governance studies. Board composition isn't assigned at random, as companies adjust their boards in response to their performance or to handle reputation matters, when ownership changes or regulations demand it. Unobserved firm characteristics, such as corporate culture, strategic direction, or overall governance quality influence both diversity and results simultaneously. A natural follow-up would be fixed-effects panel models, focusing on changes within firms over time, and eliminating concerns that findings are driven by time-invariant firm differences.
Second, the analysis uses standard firm performance indicators (accounting- and market-based), but these outcomes is not the only channel through which governance operates. Board composition affects also the firm's decision-making environment first, such as the intensity of monitoring, strategic risk-taking, disclosure quality, or stakeholder-related policies, which later translate into financial ratios. Future works could therefore complement this measures with outcomes that are closer to governance mechanisms, for example measures of risk-taking or ESG-related indicators, which may respond faster to board-level changes.

Third, the empirical specifications include firm size as the logarithm of operating revenue. While this is a standard control, it can also create practical interpretation issues, because scale is related to several accounting ratios and is correlated with both ROA and ROE in the sample. A useful robustness strategy would be to test alternative size controls (e.g., log total assets, log number of employees), so that the estimated diversity coefficients are less sensitive to the specific proxy chosen.

Fourth, data availability remains a major constraint, especially for cultural diversity. In the dataset, the nationality-based proxy is observed for a limited number of firm-year observations, which sharply reduces sample size when it is included together with other controls. This limitation influence the representativeness as well, for example, firms with more international exposure are more likely to have reported nationality information. Future research could improve this aspect by using broader governance datasets or by collecting data from multiple sources in order to reduce the missing observations.

Fifth, the baseline model doesn't take into account major macroeconomic or institutional shocks that may affect firm performance across years. Over 2015-2024, several events may have influenced profitability across firms, such as the COVID-19 period and the energy-price shock in Europe. Future work could incorporate dummies for major events (e.g., 2020-2021 for the pandemic period, 2022 for the energy shock) or crisis indicators to separate structural governance relationships from temporary, system-wide effects.

Lastly, Italy provides a clear institutional setting due to its gender quota laws, but it also means that gender diversity is relatively high and may be partly "standardised". This can reduce variation and make it harder to identify performance effects in cross-sectional regressions. A useful extension would be to compare Italy with countries where diversity is still optional or uneven, or to study the particular periods, for example, the years around governance reforms, when adaptations and differences are more pronounced.

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Appendix A1. SPSS output for baseline regressions

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.334[a]	.112	.103	5.19153	.652

a. Predictors: (Constant), ln_op_revenue, women_on_board, SD_age, board_size

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1326.927	4	331.732	12.308	<.001[b]
	Residual	10565.179	392	26.952		
	Total	11892.106	396			

a. Dependent Variable: ROA

b. Predictors: (Constant), ln_op_revenue, women_on_board, SD_age, board_size

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	16.596	3.114		5.330	<.001		
	women_on_board	.026	.035	.038	.763	.446	.937	1.067
	SD_age	.172	.108	.078	1.603	.110	.952	1.051
	board_size	-.086	.087	-.050	-.989	.323	.899	1.112
	ln_op_revenue	-.993	.166	-.298	-5.976	<.001	.913	1.095

a. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.429[a]	.184	.175	1.096439	.450

a. Predictors: (Constant), ln_op_revenue, women_on_board, SD_age, board_size

b. Dependent Variable: tobins_q

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	100.611	4	25.153	20.923	<.001[b]
	Residual	447.210	372	1.202		
	Total	547.821	376			

a. Dependent Variable: tobins_q

b. Predictors: (Constant), ln_op_revenue, women_on_board, SD_age, board_size

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.756	.665		7.146	<.001		
	women_on_board	.003	.007	.021	.428	.669	.946	1.057
	SD_age	.052	.023	.107	2.253	.025	.965	1.036
	board_size	-.028	.019	-.074	-1.488	.138	.898	1.113
	ln_op_revenue	-.277	.036	-.379	-7.733	<.001	.916	1.092

a. Dependent Variable: tobins_q

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.268[a]	.072	.062	14.09611	.746

a. Predictors: (Constant), ln_op_revenue, women_on_board, SD_age, board_size

b. Dependent Variable: ROE_w

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6017.958	4	1504.489	7.572	<.001[b]
	Residual	77890.481	392	198.700		
	Total	83908.439	396			

a. Dependent Variable: ROE_w

b. Predictors: (Constant), ln_op_revenue, women_on_board, SD_age, board_size

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	37.670	8.455		4.455	<.001		
	women_on_board	.183	.094	.098	1.945	.052	.937	1.067
	SD_age	-.067	.292	-.011	-.229	.819	.952	1.051
	board_size	-.101	.237	-.022	-.425	.671	.899	1.112
	ln_op_revenue	-2.146	.451	-.242	-4.754	<.001	.913	1.095

a. Dependent Variable: ROE_w

Appendix B1. SPSS output for the supplementary regressions with cultural_div (restricted sample)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.224[a]	.050	.027	5.30920	.693

a. Predictors: (Constant), ln_op_revenue, women_on_board, cultural_div, board_size, SD_age

b. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	309.956	5	61.991	2.199	.056[b]
	Residual	5863.021	208	28.188		
	Total	6172.976	213			

a. Dependent Variable: ROA

b. Predictors: (Constant), ln_op_revenue, women_on_board, cultural_div, board_size, SD_age

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	12.803	5.029		2.546	.012		
	women_on_board	.024	.052	.032	.451	.653	.883	1.132
	cultural_div	.038	.041	.063	.921	.358	.980	1.021
	SD_age	-.029	.203	-.011	-.145	.885	.750	1.333
	board_size	-.029	.129	-.017	-.228	.820	.857	1.167
	ln_op_revenue	-.727	.244	-.218	-2.978	.003	.852	1.174

a. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.215[a]	.046	.024	14.22152	.916

a. Predictors: (Constant), ln_op_revenue, women_on_board, cultural_div, board_size, SD_age

b. Dependent Variable: ROE_w

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2048.106	5	409.621	2.025	.076[b]
	Residual	42068.339	208	202.252		
	Total	44116.445	213			

a. Dependent Variable: ROE_w

b. Predictors: (Constant), ln_op_revenue, women_on_board, cultural_div, board_size, SD_age

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	38.083	13.471		2.827	.005		
	women_on_board	.126	.141	.065	.898	.370	.883	1.132
	cultural_div	-.045	.111	-.028	-.406	.685	.980	1.021
	SD_age	-.534	.543	-.077	-.983	.327	.750	1.333
	board_size	-.153	.345	-.032	-.443	.658	.857	1.167
	ln_op_revenue	-1.724	.654	-.193	-2.635	.009	.852	1.174

a. Dependent Variable: ROE_w

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.397[a]	.157	.136	1.158714	.412

a. Predictors: (Constant), ln_op_revenue, women_on_board, cultural_div, board_size, SD_age

b. Dependent Variable: tobins_q

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	49.946	5	9.989	7.440	<.001[b]
	Residual	267.181	199	1.343		
	Total	317.127	204			

a. Dependent Variable: tobins_q

b. Predictors: (Constant), ln_op_revenue, women_on_board, cultural_div, board_size, SD_age

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.920	1.121		4.389	<.001		
	women_on_board	.000	.012	.001	.017	.986	.892	1.121
	cultural_div	.009	.009	.067	1.013	.312	.979	1.022
	SD_age	.037	.046	.061	.811	.419	.755	1.325
	board_size	-.012	.029	-.030	-.422	.674	.847	1.181
	ln_op_revenue	-.294	.055	-.374	-5.396	<.001	.880	1.137

a. Dependent Variable: tobins_q

Appendix C1. SPSS output for the extended model.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.446[a]	.199	.185	9.256365	.913

a. Predictors: (Constant), solvency_ratio, board_size, SD_age, women_on_board, ln_op_revenue

b. Dependent Variable: ROCE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6014.514	5	1202.903	14.039	<.001[b]
	Residual	24247.523	283	85.680		
	Total	30262.036	288			

a. Dependent Variable: ROCE

b. Predictors: (Constant), solvency_ratio, board_size, SD_age, women_on_board, ln_op_revenue

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-10.441	7.946		-1.314	.190		
	women_on_board	.143	.076	.104	1.898	.059	.948	1.055
	SD_age	.260	.220	.065	1.183	.238	.944	1.059
	board_size	-.286	.207	-.076	-1.377	.170	.926	1.080
	ln_op_revenue	.444	.394	.071	1.127	.261	.718	1.393
	solvency_ratio	.269	.037	.461	7.365	<.001	.722	1.384

a. Dependent Variable: ROCE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	.389[a]	.152	.141	16.991136	.680

a. Predictors: (Constant), solvency_ratio, women_on_board, SD_age, board_size, ln_op_revenue

b. Dependent Variable: profit_margin

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19953.195	5	3990.639	13.823	<.001[b]
	Residual	111726.394	387	288.699		
	Total	131679.589	392			

a. Dependent Variable: profit_margin

b. Predictors: (Constant), solvency_ratio, women_on_board, SD_age, board_size, ln_op_revenue

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	90.074	11.871		7.587	<.001		
	women_on_board	.085	.114	.036	.747	.455	.933	1.071
	SD_age	-.563	.355	-.077	-1.586	.114	.940	1.064
	board_size	.682	.289	.117	2.364	.019	.888	1.126
	ln_op_revenue	-5.071	.617	-.423	-8.213	<.001	.825	1.213
	solvency_ratio	-.137	.048	-.144	-2.868	.004	.864	1.157

a. Dependent Variable: profit_margin