LEADERSHIP IN HEELS: WOMEN ON BOARDS AND SUSTAINABILITY IN TIMES OF COVID-19

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ABSTRACT

From a business perspective, the health and socio-economic effects of the Covid-19 have affected a firm's stakeholders to a different extent, making it necessary for them to develop sustainable initiatives that allow them to meet their needs. Decisions must be made and implemented in a recessionary environment in which companies debate whether it is economically reasonable to promote them and whether they can afford not to do so. In this work, based on the theory of social identity, we argue that these business commitments will have been promoted in companies with boards of directors that have a greater female presence. The results obtained for a sample of 4,821 multinationals confirm that the repercussion of incidental affect on the social identity of the in-group of female directors has partially slowed the setback that business sustainability has suffered due to the pandemic, which is especially important with respect to good governance policies and practices and guaranteeing the social and environmental commitment of previous years. This evidence has important theoretical and practical implications, contributing the current debate on strategic decisions regarding sustainability and the benefits associated with board gender diversity.

KEYWORDS

Women; female directors; board of directors; sustainability; Covid-19; social identity

INTRODUCTION

The innumerable health, economic, and social consequences caused by Covid-19 and the necessary containment restrictions to curb its transmission affect organizations, families, and individuals (Overberg et al., 2021), which are configured such as the interest groups affected by this pandemic, whose needs must be considered by companies within their sustainability strategies (Bansal et al., 2021; and Tettamanzi et al., 2022). Moreover, Crane and Matten (2021) affirm the challenges in the concepts and practices of sustainability require the identification and prioritization of different stakeholders´ demands to manage risks, as well as a reevaluation of value creation theories due to these challenges occurring in an environment of economic slowdown, in which companies have to face enormous threats.

From this, a debate that had lost intensity is strongly emerging, namely, "stakeholderism" versus "shareholderism" (Bebchuk and Tallarita, 2020; Mayer, 2020), attempting to reflect on

whether companies should maximize stakeholder welfare or shareholder value. In this sense, although there is no unanimity due to agency costs (Demers et al., 2020; Bae et al., 2021), in general, previous literature suggests that stakeholderism increases the value of a company for shareholders (i.e., Deng et al., 2013; Borghesi et al., 2014; Flammer, 2015, 2021; Ferrell et al., 2016; Lins et al., 2017; Kim et al., 2019; Cao et al., 2019; Albuquerque et al., 2020; Dai et al., 2021; Gao et al., 2021), especially in times of financial crisis (i.e., Bénabou and Tirole, 2010; Di Giuli and Kostovetsky, 2014; Cheng et al., 2014; Masulis and Reza, 2015). In this line, recent studies show the stock-return and the market value of companies decrease sharply with Covid-19 consequences, but this effect is less pronounced in firms with greater commitments to sustainability (i.e., Ding et al., 2021; Garel and Petit-Romec, 2021; Bose et al., 2022).

Although investing in sustainability brings benefits even during periods of economic adversity, the results of the papers that have observed business reactions in the toughest moments of the pandemic suggest the existence of very different decisions regarding the preference they have given to the interests of shareholders and stakeholders (García-Sánchez and García-Sánchez, 2020; Talbot and Ordoñez-Ponce, 2020; Gürlek and Kılıç, 2021). More specifically, these authors have shown companies that reoriented and increased their sustainable actions to meet the new needs caused by the pandemic but also firms that have caused greater inequalities with the cancellation of supplier contracts, layoffs, poor home-working conditions, less transparency with its shareholders and other groups, relaxing its good governance practices, among others. Therefore, it is possible to affirm that there are concerns about companies that have reduced their commitment to sustainability during the pandemic and it is necessary to expand the knowledge regarding what companies have done to respond to this global crisis (Carroll, 2021) and the reasons that have driven some companies to promote more responsible actions in the face of the previous decisions that have been mentioned (He and Harris, 2020; Phang et al., 2023).

To increase the knowledge about the drivers of this strategy without considering recessionary contexts, a significant number of academics have focused their research on understanding the role that women in leadership positions play in terms of sustainability (i.e., Amorelli and García-Sánchez, 2020a; Bannò et al., 2021; Campopiano et al., 2022; Zhao et al., 2022), especially with respect to the functions they perform within the board of directors because: (i) strategic decisions are taken within this body, including those related to sustainability; (ii) this is the body responsible for supervising the actions of top management; and (iii) in the last decade, there has been a larger presence of female directors as a result of the current requirements in many countries regarding gender parity that should characterize this body.

In addition, the interest in analyzing the role that women directors have had regarding the business decisions that have been made during Covid-19 is justified by the traditional difference between the roles that men and women adopt in their public and private spheres, which has been exacerbated during the pandemic. To give a few examples, women have been at the forefront of the battle against Covid-19 because according to the OECD (2020), they represent almost 70% of the workforce in the health care sector. In addition, during confinement, several studies evidenced that women have assumed greater domestic obligations than men (i.e., Hipp and Bünning, 2021; Czymara et al., 2021), increasing the difference from up to ten times that which has been previously identified by the OECD (2019) in the Development Center's Social Institutions and Gender Index 2019. Thus, we understand that a potential explanation for the divergences in business behavior observed during the pandemic can be explained by the categorical thinking and stereotypes of directors associated with the prevalence of economic and individualistic criteria vs. collective interest or common good that characterizes the genders, as has been shown in the professional and family decisions indicated. On the other hand, Martínez-Cordoba et al. (2021) have shown that although the representation of women in politics is limited, their leadership has allowed for effective responses, especially focused on a better reconstruction of the countries (UN Women, 2021).

More precisely, the objective of this study is focused on expanding the knowledge of the effect that capacities, competencies, and other cognitive traits related to the gender of the directors (Akhmetshin et al., 2018; Ferramosca and Verona, 2020; Mohan et al., 2022) can have with respect to the decisions that companies have made regarding sustainability in 2020, a year of economic slowdown, health vulnerability, and increased social inequality. Based on the theory of social identity, we argue that those boards with a greater number of seats occupied by women will have been more favourable to maintaining sustainability initiatives to face the new demands resulting from the Covid-19 pandemic.

We know that the social identity of female directors is an important aspect of their self-concept and leads them to make efforts to ensure that the sense of that group identity is maintained, presenting a high motivation towards sustainability and social action. However, previous empirical evidence is not conclusive. In the present work, we extend the contributions that precede us, analysing the impact of the incidental affect that Covid-19 bestows. To do this, it will be observed whether the effects of social identity associated with gender diversity are enhanced depending on the characteristics of the strategic environment in which a company operates. In the case of the pandemic, the incidental affect would be a consequence of the fact that women continue to be a minority group that reacts to health, economic, and social threats

in accordance with the values determined by their belonging to the most vulnerable in-group and their worries about other individuals in similar situations, associated with theirs cognitive traits and beliefs.

In this vein, sustainability will be linked to the ESG (Environmental, Social and Governance) criteria used as a reference for socially responsible investment. These criteria determine the level of responsibility that companies have with respect to the environment; people, social justice, and the society; and good governance. All these factors are of special relevance in times of a pandemic due to the consequences derived from Covid-19 that have been mentioned previously and will be detailed in later sections.

For an unbalanced sample of 4,821 multinationals in the period 2015–2020, the results obtained are indicative of the impact of incidental affect on the social identity of the in-group of female directors regarding sustainability decisions. In this regard, business commitments to its stakeholders have been negatively affected by the pandemic. This decline has been lower in companies with more diverse boards, especially regarding good governance policies, guaranteeing the social and environmental commitment of previous years. The evidence confirms the differences in roles by gender that have been revealed in several works focused on analysing the role that working women have assumed in periods of confinement with respect to different family obligations, especially regarding the care of children and the elderly (Andrew et al., 2020; Carlson et al., 2020; UN Women, 2020a, 2020b; Carli, 2020).

This paper contributes to the academic debate regarding the role that women play within a body that assumes important business responsibilities in relation to sustainability in uncertain times and chaos. Various researchers that have synthesized current knowledge indicate that the environment in which a company operates affects the relationship between sustainability and board diversity, mainly considering the institutional effect at the firm level (i.e., Majumder et al., 2017; Endrikat et al., 2020). Thus, our work complements existing knowledge by incorporating the moderating effect that an environment of economic recession and health crisis has had on the decisions made by female professionals. In addition, this research allows us to understand whether are different from those of male directors, confirming the arguments of social identity theory and the existence of an incidental affect with respect to the female in-group. Additionally, we contribute to the current knowledge by determining the gaps and future research pathways for advancing the knowledge of the role that the presence of females in top positions could implies for business strategy, in general, and sustainability, in particular.

In terms of methodology, to better isolate the role of social gender identity and incidental affect associated with the pandemic with respect to sustainability, we included several variables at

the company and institution level. In addition, due to the use of a data panel, the possible causality related to the possibility that the most sustainable companies increase the number of female directors and the unobservable heterogeneity that leads to homogeneous temporary behaviours in each company and other unobserved factors have been controlled, which may cause many companies to respond similarly over time.

The paper is structured in five sections plus a section for the final conclusions. In section 1, a review of the state of the art is carried out in relation to the impact of the pandemic on business decisions regarding sustainability. The following epigraph proposes the theoretical framework and research hypotheses regarding the role that women directors may have played in this regard. In the third section, the empirical design of the research is described. The following epigraph presents and discusses the results, with special attention to the robustness of the empirical evidence obtained. The fifth section is dedicated to carrying out new analyzes that allow complementing the knowledge regarding the impact of incidental affect associated with the pandemic versus other period of economic crisis.

1. SUSTAINABILITY IN TIMES OF A PANDEMIC

In recent decades, the world's leading companies have been immersed in contributing to sustainable development by establishing strategies that balance the social, environmental, and economic impacts of their activities. These strategies require responsible policies and actions, and the disclosure of more detailed reports on them and the involvement of stakeholders (Johnsen et al., 2017; Tettamanzi et al., 2022).

This approach assumes that business concerns go beyond the interests of shareholders, in favour of other stakeholders, and that the company's contributions to society are broader than what is established in regulations. In this more altruistic version of the business world, sustainability strategies aimed at sustainable development and social good are configured, being a source of competitive advantages (Christensen et al., 2014). From this perspective, companies are forced to attend to the needs of a variety of stakeholders who have been impacted by the effects of Covid-19, including, in addition to individuals and society, the environment (Lawton et al., 2020; Carroll, 2021).

In general, academic research suggests that companies are rewarded by these policies, with this being more noticeable during periods of different types of crisis as they enjoy privileges due to increased support from their stakeholders (Lins et al., 2017; Boubaker et al., 2020; Bae et al., 2021; Garel and Petit-Romec, 2021; Qiu et al., 2021). However, recent studies suggest that to achieve this, business commitments must be genuinely consistent with the demands of interest

groups (Bae et al., 2021), while decoupling strategies (lips out) are insufficient in the era we live in to guarantee the firm's survival (He and Harris, 2020).

It must be borne in mind that the pandemic has provoked a humanitarian and economic panic, causing economies to struggle to alleviate it and many companies to collapse due to its negative consequences (Zhang et al., 2020; Sharif et al., 2020; Anggadwita et al., 2022; Tettamanzi et al., 2022; Ajeigbe and Ganda, 2023; Phang et al., 2023). Also, we currently live in a state of continuous alert due to the appearance of variants that cause different waves of contagion that make it difficult to achieve a status of continued normality (Pitofsky, 2020). More concretely, the pandemic has also led to the paralysis of production, the breakdown of the supply chain, liquidity problems, among others that have entailed the firms´ decisions with strong implications for all the company's stakeholders.

García-Sánchez et al. (2021) show that on the one hand, in certain companies, these decisions have been made mainly aimed at guaranteeing liquidity and avoiding losses that have led to cancellations in the distribution of dividends, disinvestment and layouts. These decisions have been communicated in a single crisis declaration letter that directors used to outsource the responsibilities in the event. These actions affect the good corporate governance of the company. In addition, these decisions disproportionally affect a vulnerable group, which is made up of important segments of the population – older people, women, people with disabilities, and refugees and migrants. From the environmental point of view, the confinement due to the pandemic led to a considerable reduction in daily CO_2 emissions, although the economic implications of the Covid-19 affect the commitment in the fight against climate change.

On the other hand, several firms have adopted an opposite strategy with a higher commitment with new ecological investment to guarantee employment, equality, and economic recovery, using an interactive communication strategy with these stakeholders. Therefore, these firms use sustainability as a tool to manage risks (Crane and Matten, 2021; Ajeigbe and Ganda, 2023), oriented towards the following risks and responsibilities: (i) social level: employees (health and labor conditions), supply chain responsibilities/vulnerability and societal inequalities; (ii) governance: shareholder interests, transparency, and good governance principles; and (iii) environment: commitments, above all, in the fight against climate change. All of them, according to Carroll (2021), lead to wondering what companies should do to help alleviate the adverse effects of the pandemic in these uncertain times for them. We try to respond in this work to the leadership style that fosters these decisions.

2. FEMALE DIRECTORS, SOCIAL IDENTITY, AND INCIDENTAL AFFECT: RESEARCH HYPOTHESIS

2.1. The state of the art

The board of directors assumes several responsibilities about the firms´ sustainability strategy, determining the balanced consideration and integration of the expectations of all stakeholders. Their level of interest and commitment determines the degree of success in the formulation and execution of the different social and environmental policies (García-Sánchez et al., 2020a). Numerous authors take the view that a greater heterogeneity linked to the gender of the directors entails positive and negative aspects in the decision-making process. However, the greater number of female directors tends to tip the balance in favour of practices more aligned with the demands of stakeholders, as evidenced by different literature review articles (i.e., Rao and Tilt, 2016; Velte, 2017; Nguyen et al., 2020; Amorelli and García-Sánchez, 2020b; Naciti et al., 2021; Bannò et al., 2021; García-Sánchez, 2021) and in meta-analysis (i.e., Byron and Post, 2016; Endrikat et al., 2020).

However, considering the most recent studies on diversity, sustainability, and corporate responsibility, the results are inconclusive. Thus, several studies have found a positive relationship (i.e., Shoham et al., 2017; Elmagrhi et al., 2019; Yaseen et al., 2019; Provasi and Harasheh, 2020; Beji et al., 2020; Rehman et al., 2020; Govindan et al., 2021; Uyar et al., 2021; Al-Najjar and Salama, 2022; De Masi et al., 2022; Galletta et al., 2022; Issa et al., 2022; Moreno-Ureba et al., 2022; Wang et al., 2022; García-Sánchez et al., 2023), while others have observed non-significant (Ajaz et al., 2020; Zaid et al., 2020; Ardito et al., 2020) and even negative (Sanan, 2016; Loukil et al., 2019; García-Sánchez et al., 2020b; Fakir and Jusoh, 2020; Bristy et al., 2020; Orazalin and Baydauletov, 2020) relationships, presenting divergences in favour of economic dimensions over social and environmental ones (Nadeem et al., 2020; Nguyen et al., 2021). In addition, there may be a temporary effect that indicates changes in the role that female directors play, in the sense that a change has been observed in the interest they show regarding the adoption of ethical policies and management of the firm's activities (i.e., Nadeem et al., 2017; Monteiro et al., 2021), something that did not occur in previous times (i.e., Rodríguez-Domínguez et al., 2009; García-Sánchez et al. 2015).

The divergence of the results obtained may justify the fact that the sustainability linked to a greater gender diversity of the board does not always provoke an increase in the firm's value (i.e., Bristy et al., 2020; Ajaz et al., 2020), as contradictory effects, both positive (i.e., Bektur and Arzova, 2020; Qureshi et al., 2020; Atif et al., 2021) and negative (i.e., Buil-Fabrega et al., 2017; Pan et al. al., 2020), can be observed.

Authors such as Campopiano et al. (2022) consider that these divergences are due to different reasons, highlighting the biases that the authors can introduce in their research, especially in the establishment of their theoretical frameworks and the configuration of the variables that they use in their empirical models. They conclude the stereotypes based on conventional gender roles and the consideration of the percentage of female directors are inadequate to contrast the hypotheses related to the role that women have in decision-making. It is necessary to incorporate structural dimensions such as the presence of a critical mass of female directors, experience and professional career, hierarchical position, and permanence in the organization. In addition it is possible the consideration of the impact of the context and the conditions of the board that may or may not favor the implications associated with gender diversity. This is because they consider that individual characteristics can be substitutes for the biases and personal values associated with the group.

In this line, several authors show that this effect is conditioned by the role of key influencers or tokens that women may be playing within the board (Elstad and Ladegard, 2012; Amorelli and García-Sánchez, 2020a), by socio-demographic and educational factors (i.e., Alazzani et al., 2017; García Martín and Herrero, 2020) and, in particular, by institutional factors at the company (ownership), sector (type of activity), and country level (i.e., Campopiano et al., 2019; García-Sánchez et al., 2020a; Govindan et al., 2021). Moreover, several works show that their leadership could be conditioned by the responsibilities, networks, and experiences that women allow during their professional trajectory (Tomkins and Simpson, 2015).

There are extremely important studies to understand how and when women directors contribute to improving corporate commitment to sustainability. However, most of these approaches suppose a juxtaposition based on the existence of two conflicting and incongruous roles that women either adopt a masculine role to access positions of power and exercise as leaders or else assume a traditional female role linked to gender stereotypes (Becker et al., 2002), which is negatively affected by cognitive biases related to a greater interest in inclusion and solidarity and low motivation to access leadership positions and achieve a dominant presence (Hernández Bark et al., 2016), perhaps due to the female difficulties in fitting into the dynamics of traditional corporate structures (Mavin and Grandy, 2016).

So, gender stereotypes currently in force as previously indicated (OECD, 2019, 2020) entail essential beliefs and values in today's world (concerned about the social and business impacts of organizations), which turn women into role models for their transformational leadership (Nekhili et al., 2016) determined by the cognitive dimensions of their gender (Mohan et al., 2022). Specifically, their presence brings unique capabilities and resources to companies

(Nielsen & Huse, 2010), as it is accompanied by a more participatory, empathic, and creative decision-making style (Christensen et al., 2014; Javidan et al., 2016), and greater solidarity and sensitivity to social problems (Williams, 2003). Their presence promotes a cultural change in corporations (Klettner et al., 2016), modifying the dynamics of decision-making bodies (Zhang et al., 2015). These effects linked to the traditional gender stereotype can be enhanced by certain structural conditions, such as greater knowledge, expertise, and skills (Byron and Post, 2016; Marano et al., 2022), by making them more aware of the business reality (Boulouta, 2013), as well as by a greater influence associated with a greater presence (Cook and Glass, 2018) and status (Nekhili et al., 2016), by increasing the probability of being heard. All this, the contribution is dependent on a set of contexts and interactions that hinder or favor their contributions (Byron & Post, 2016).

According to the previous arguments, in this paper, to contribute to current knowledge, we consider diversity as a feature of heterogeneity using the theory of social identity to categorize the decisions made within the board based on gender issues, emphasizing the positive aspects that diversity implies in terms of sustainability in the pandemic period this be response to incidental affect. In this sense, this work focuses on testing the effect that the proportion of women, as a group with a common social identity, has on the implementation of business policies aimed at integrating the challenges of society in uncertain and economically adverse periods. In addition, the previously mentioned factors (i.e., expertise, background, skills, etc.) have avoided because it would suppose the consideration of a different research question by involving the inclusion of the analysis of attributes other than gender.

2.2. The in-group of women on the board and their social identity

According to social psychology, the social identity of an individual is built from the sum of two identities – one individual, which includes the aspects that make us peculiar and unique as people, and the other social, which brings together the characteristics that we share with our peers within different groups. The identity of belonging to groups facilitates and determines our interpersonal and intergroup relationships, as well as relationships with the physical environment, and arises because of the interaction between psychological processes – cognitive, evaluative, and emotional – and social reality (Tajfel and Turner, 1979).

Thus, according to Tajfel (1981), social identity forms part of the self-concept of each individual associated with the knowledge of belonging to one or several social groups, determined by the emotional and evaluative meaning of these memberships. In other words, it supposes an integration of the natural reality – biological and psychological – and the concept

of society in which the individual lives: history, language, power structures, customs, rules and social norms, etc.

The individual is categorized as a process of order and simplification of social reality. The decision involves the creation of two separate categories: the in-group (female directors) and the out-group (male directors) and the construction of social identity based on the group to which they belong, which accentuates the differences between and the similarities within categories. In this regard, the individual maximizes their self-esteem with the specific groups to which they belong, helping them to be positively valued and benefit from the comparison. Therefore, this categorical thinking is constitutive of the way in which people understand their environment, simplifying the perception of social reality and decision-making process.

Gender is seen as an extensive social category because each individual necessarily belongs to one of the existing groups, i.e., men or women (Athenstaedt et al., 2008) – a categorization that supposes the construction of different stereotypes (subcategorizations) about the masculine and the feminine (Dovidio et al., 2003), providing expectations about social interactions that, in the case of not being fulfilled, penalize the deviation of the expected behaviour. Specifically, the previous literature highlights the significant connections that exist between gender and cognitive profiles in business contexts. Men and women, in general, are governed by different social norms, consider a variety of perspectives, and tend to adopt different attitudes associated with the cognitive background of diversity created by entrenched social conventions. Therefore, gender identity is undoubtedly one of the main forms of social division that explains the diverse implications that exist within business bodies in which decisions are made, such as the board of directors.

Thus, the literature is full of examples of group preferences of male-dominated boards in favour of hiring their peers (i.e., Gregorič et al., 2017; Allemand et al., 2022) and the need for regulation that acts against women's access to levels of corporate power, etc. (i.e., Gabaldon et al., 2016; Doldor et al., 2016; Galia et al., 2017; Joecks et al., 2019). According to the theory of social identity, these behaviors are linked to the masculine cognitive profiles of the out-group because men should show attitudes and behaviors more oriented towards power and success, in accordance with different social norms, and a cognitive background rooted in a long tradition in the exercise of this role.

The previous evidence of the impact of a greater presence of women greater on the commitment to the demands of the different stakeholders justified the "empathetic and caring" female stereotype, in that women generally have more altruistic traits. This leads them to sympathize more with disadvantaged groups and pay more attention to those collectives that need help

(Amorelli and García-Sánchez, 2020b). Thus, the theory of social identity allows us to understand the changes that the female directors introduce as an idiosyncratic in-group, promoting values such as care, inclusion, well-being, justice, satisfaction, ethics, and responsibility as female cognitive dimensions linked to high morale, warmth, and solidarity (Monzani et al., 2015). These cognitive elements influence both the way in which the directors perceive themselves as a group and the way in which they wish to treat their colleagues and the different stakeholders. In other words, women directors promote a friendly framework for stakeholders due to their cognitive profile, regardless of whether they are part of the in-group linked to the female gender. In short, the differences in the commitment of each group in relation to sustainability would be rooted in conventional gender roles.

2.3. The incidental affect of Covid-19

The declaration of the Covid-19 pandemic has led to home confinement policies and a whole series of measures to protect the population from contagion, and in situations of isolation, the world population has faced two critical situations: the fear of contagion, and with-it death, and the crisis caused by confinement. In the case of business leaders, it has meant an increase in their stress level due to increased concerns about the well-being of employees, uncertainty regarding the company's performance, and their fear of losing their jobs. In general, all of this is accompanied by reductions in their income as an economic measure imposed by numerous companies (García-Sánchez and García-Sánchez, 2020).

To shed light on current knowledge, we will consider how affective processes can be affected by intergroup relations, focusing on incidental affect, that is, on those emotions not directly aroused in the relationship with other groups, in the case of Covid-19. This approach involves the analysis of the effect that the state of mind supposes over the judgments or decisions that the female directors (in-group) make in an inconsistent way, taking place in a complicated and unforeseen situation, a context in which the state of mind becomes more influential in evaluations and answers.

In doing this, the affect infusion model of Forgas (1995) tries to explain how mood affects the process information, under the assumption that its effect tends to be exacerbated in complex situations that require substantial cognitive processing, influencing information processing and response resulting from four heterogenous processing strategies.

The strategies identify several degrees of severity to which the effects of Covid-19 exert their influence and range from resorting to responding to previous experiences (direct access processing), search strategies (motivated processing), processing emotional

reactions (heuristic processing), and involvement of mood in the entire cognitive process (substantive or systematic processing). All of them suppose a greater presence of expectations and personal identity in the decision-making process (Wilder and Simon, 2001), this effect being greater with negative (positive) emotions because they activate deep (superficial) processes. In addition, self-concepts tend to be congruent with the state of mind, as they are able to produce an activation of personal identity, especially in majority groups (Clark and Isen, 1982).

According to Turner et al. (1987), the affective states derived from negative events can reinforce the values of security and power and the in-group social identity, especially in minority groups. This intra-group solidarity strengthens the values of concern for the well-being of the members of the group itself and becomes more salient when there is a perception of conflict and social threat (Stephan et al., 2002). This causes the cognitive traits of the in-group to be reinforced to guarantee their survival and determine the ability with which the female directors process situations and make decisions, using more categories to discriminate between stimuli and see more connections between them. It lead them to adopt empathetic leadership with which they promote solidarity strategies related to their conventional traits of femininity. On the contrary, the out-group will enhance their masculine cognitive traits, focusing on decision-making based on economic criteria.

Thus, the pandemic supposes a context of crisis that is, by definition, uncertain, in which one might think that the opinions that emerge from their group of belonging will be more important than ever for the female directors. In addition, due to the negative cognitive burden that the pandemic poses as a threat to the state of well-being and the perception of limitations in the execution of activities or actions necessary to get out of it, it exacerbates the social polarization and the emotional judgments of the in-group as a protection mechanism. That is, the context presents a series of conditions that favour collective action of the in-group (Tilly, 1978), such as the existence of common interests and the belief that it is necessary to organize to defend them, and the mobilization of material, social, and communicative resources is necessary to achieve the end pursued by the action. Additionally, social vulnerability, understood as the risk of suffering harm in the event of an eventual contingency and the inability to avoid the harmful result, reduce it, and/or face it, will entail a greater commitment on the part of the directors as a weaker group or collective, more vulnerable to job loss.

Therefore, we believe that the incidental affect derived from the pandemic enhances the pattern of behaviour that women in-group adopt in decision-making associated with their

social identity, promoting additional specific actions to meet the new demands of the different stakeholders, arguments that lead us to establish the first working hypothesis:

> ***Hypothesis 1 (H1).*** *The gender diversity of the board is positively associated with the sustainable business commitment, this relationship being enhanced by the incidental affection associated with the health, economic, and social vulnerability that the Covid-19 pandemic entails.*

Additionally, we argue that these decisions could have been made within companies that have been hit differently by the Covid-19. The pandemic has caused temporary disturbances in the production and commercialization of goods and services that have translated into tensions in the sales figures, causing serious liquidity problems, drops in profitability, and increased risk. In this context of business recession, it is conceivable that the commitment to sustainability may have been negatively affected. The presence of women could have limited this effect because their social identity is assimilated to a moral imperative to carry out activities aimed at protecting well-being (Apesteguia et al., 2012). It is because these objectives are integrated into their decision-making, being characterized by a greater demonstration of their innate values of ethics, altruism, empathy, and community orientation (Eagly et al., 2012; Boulouta, 2013; Anggadwita et al., 2022). These are all expected traits in the exercise of their leadership, determined by the customs and by the deep-rooted social conventions that are still in force. Thus, the studies that have analysed the male and female roles in the teleworking period during the pandemic have shown that women make use of work flexibility to pay more attention to childcare and housework, adopting a pattern of behaviour clearly associated with their social identity (Alon et al., 2020; Lyttelton et al., 2020; Collins et al., 2021). These arguments lead us to establish the following working hypothesis:

> ***Hypothesis 2 (H2).*** *In companies that have suffered a drop in their economic activity, the gender diversity of the board is positively associated with the sustainable business commitment, this relationship being enhanced by the incidental affection associated with the health, economic, and social vulnerability that the Covid-19 pandemic entails.*

3. METHOD

To contrast the central research hypotheses of this study and determine the impact of the identity of female directors on sustainability, the empirical models synthesized in Equations 1 [Eq. 1] and 2 [Eq. 2] were designed. Both correspond to endogenous models delayed by one period with the aim of controlling the impact that the variable explained

one period ago (t-1) has on the variable explained at time t. This approach is consistent with the fact that the sustainability projects in force at time t are associated with those promoted in the previous period, considering that sustainability is a continuous process (García-Sánchez et al., 2022).

For the estimation of the models, we will use linear regressions with fixed effects for panel data, using a sample of 25,506 observations during 2015–2020. The panel comprends 4,821 multinationals (unbalanced panel) whose information was extracted from the Thomson Reuters EIKON database.

To correct potential endogeneity problems, the control variables are delayed by one period, using centering variables in the interactions to control the multicollinearity that their use introduces.

$$\mathbf{ESG\_Perf}_{i,t} = \varphi_0 + \varphi_1 \text{B\_Diversity}_{i,t} + \varphi_2 \text{Covid}_{i,t} + \varphi_3 \text{B\_Diversity} * \text{Covid}_{i,t} + \varphi_4 \text{ESG\_Perf}_{i,t-1} + \varphi_5 \text{B\_Size}_{i,t} + \varphi_6 \text{B\_Activity}_{i,t} + \varphi_7 \text{B\_Indep}_{i,t} + \varphi_8 \text{CEOduality}_{i,t} + \varphi_9 \text{CSRCommittee}_{i,t} + \varphi_{10} \text{B\_Tenure}_{i,t} + \varphi_{11} \text{F\_Age}_{i,t} + \varphi_{12} \text{F\_Size}_{i,t} + \varphi_{13} \text{F\_ROA}_{i,t} + \varphi_{14} \text{F\_Leverage}_{i,t} + \varphi_{15} \text{F\_WorkCap}_{i,t} + \varphi_{16} \text{F\_R\&D}_{i,t} + + \varphi_{17} \text{F\_Adverstising}_{i,t} + \varphi_{18} \text{F\_Capex}_{i,t} + \varphi_{19} \text{F\_Dividend}_{i,t} + + \varphi_{20} \text{I\_Factor1}_{i,t} + \varphi_{21} \text{I\_Factor2}_{i,t} + \varphi_{22} \text{Country}_i + \varphi_{23} \text{Industry}_i + \varphi_{24} \text{Year}_t + \varepsilon_{it} + \eta_i \quad \text{[Eq. 1]}$$

$$\mathbf{ESG\_Perf}_{i,t} = \varphi_0 + \varphi_1 \text{B\_Diversity}_{i,t} + \varphi_2 \text{Covid}_{i,t} + \varphi_3 \text{B\_Diversity} * \text{Covid}_{i,t} + \varphi_4 \text{DSales\_Decline}_{i,t} + \varphi_5 \text{B\_Diversity} * \text{DSales\_Decline}_{i,t} + \varphi_6 \text{DSales\_Decline} * \text{Covid}_{i,t} + \varphi_7 \text{B\_Diversity} * \text{DSales\_Decline} * \text{Covid}_{i,t} + \varphi_8 \text{ESG\_Perf}_{i,t-1} + \varphi_9 \text{B\_Size}_{i,t} + \varphi_{10} \text{B\_Activity}_{i,t} + \varphi_{11} \text{B\_Indep}_{i,t} + \varphi_{12} \text{CEOduality}_{i,t} + \varphi_{13} \text{CSRCommittee}_{i,t} + \varphi_{14} \text{B\_Tenure}_{i,t} + \varphi_{15} \text{F\_Age}_{i,t} + \varphi_{16} \text{F\_Size}_{i,t} + \varphi_{17} \text{F\_ROA}_{i,t} + \varphi_{18} \text{F\_Leverage}_{i,t} + \varphi_{19} \text{F\_WorkCap}_{i,t} + \varphi_{20} \text{F\_R\&D}_{i,t} + + \varphi_{21} \text{F\_Adverstising}_{i,t} + \varphi_{22} \text{F\_Capex}_{i,t} + \varphi_{23} \text{F\_Dividend}_{i,t} + + \varphi_{24} \text{I\_Factor1}_{i,t} + \varphi_{25} \text{I\_Factor2}_{i,t} + \varphi_{26} \text{Country}_i + \varphi_{27} \text{Industry}_i + \varphi_{28} \text{Year}_t + \varepsilon_{it} + \eta_i \quad \text{[Eq. 2]}$$

The ESG_Perf variable corresponds to the Refinitiv ESG score available at Thomson Reuters EIKON. This score is determined by the overall score that each company obtains regarding commitment and performance in social, environmental, and corporate governance matters. The range of scores is between 0 and 100 points. Additionally, to obtain robust results, this score

will be used in a disaggregated manner in relation to the scores that the company obtains in each of the three pillars: environmental (Env_Perf), social (Social_Perf), and governance (Gov_Perf). In addition, the variable Var_ESG_Perf will be used to verify whether the results are robust for the annual percentage increase in sustainability performance, compared to the use of the delayed endogenous models that have been adopted for the four previous variables.

The independent variables designed to contrast Hypothesis H1 are: B_Diversity, Covid, and their interaction B_Diversity*Covid. The Covid variable corresponds to a dummy that takes a value of 1 if the year analysed is 2020; otherwise, the value is 0. The variable B_Diversity, proxy of the female social identity of the board of directors, following the previous literature mentioned in the theoretical framework, is determined by the relative presence of women directors, represented by their percentage as board members. This variable will represent the effect that the endogroup of women directors has on the degree of sustainable business commitment throughout the period analysed. The interaction with the Covid variable determines the specific effect in the year the pandemic began. The presence of women is an adequate proxy for the behavioral aspects of the in-group of female directors because it is generally accepted that gender – female vs. masculine - is a category that determines two social groups with different cognitive traits that materialize in decision-making that reflect a greater or lesser concern for economic status, power, empathy, the common good and solidarity, among other traits conventionally considered masculine vs. feminine. In this work, this categorization is applied to directors, establishing groups based on gender and independently of other cognitive traits: in-group of women and out-group of men. Therefore, the percentage of each of this type of directors determines the prevalence of the cognitive traits of each group in decision-making.

In relation to Hypothesis H2, DSales_Decline has been included, a dummy variable with the value of 1 if the company's sales have fallen compared to the previous year and the value of 0 otherwise. Its interaction with the previous independent variables makes it possible to observe in addition to the effect that a negative year-on-year evolution in economic activity has on sustainability, in general, in companies with boards with a greater percentage of female directors (B_Diversity*Covid) and in the pandemic period, in particular (DSales_Decline*Covid and B_Diversity*DSales_Decline*Covid).

Additionally, to relieve biased results, another seventeen control variables will be included, in addition to controlling for the year, industry, and geographic zone. In this sense, the fixed effects model controls for the fact that the country and the sector to which the companies belong are fixed throughout the period. So dummy at country and industry level are not included.

However, nominal country and sector variables are included to control for the heterogeneity that exists between the different countries and industries that make up our sample.

The control variables have been selected in accordance with previous authors – i.e., Amorelli and García-Sánchez (2020a), Monteiro et al. (2021), and García-Sánchez (2021), among others – and identify the most relevant characteristics of the institutional environment, the resources and capacities of the companies, and their corporate governance systems.

The variables B_Size, B_Activity, B_Indep, CEOduality, CSRCommittee, and B_Tenure identify the main characteristics of the board related to size, activity, level of independence, specialization, and experience. Specifically, the first two variables, B_Size and B_Activity, identify the capacity of the board to carry out its responsibilities in terms of sustainability according to the number of directors that make up this body and the meetings they hold. Although various authors argue that many members and meetings can hinder decision-making from an economic-financial perspective, the evidence in the case of sustainability suggests that the inclusion of social and environmental dimensions and their complexity requires a larger size and greater activity. We determine the level of specialization and concern of the directors about other dimensions of the board of directors not strictly linked to their traditional functions through the variable CSRCommittee – a dummy variable with a value of 1 when a specialized subcommittee on sustainability has been set up within the board. Its existence improves the business commitment to different ESG dimensions. B_Tenure represents the average seniority of the directors, representing the degree of knowledge they have in relation to the company's strategy and its policies and activity. This knowledge would derive from accumulated experience in the performance of their duties within the company. The variables B_Indep (proportion of independent directors) and CEOduality (a dummy with a value of 1 if the CEO of the company is also the chairman of the board) determine the degree of independence of the directors in their decision-making, as there are fewer executives on the board, which makes it difficult for them to determine the agenda of the meetings from the presidency of this body. All of them favour the independent decisions that the members of the board make relating sustainability and other firms´ strategy.

Regarding the variables that identify the resources and capabilities of the company, we use as proxies: the age of the company, F_Age – logarithm of years elapsed since its creation; the size of the firm, B_Size – logarithm of total assets; its economic return, F_ROA; the debt to total assets ratio, F_Leverage; the company's short-term liquidity proxied by the working capital ratio, F_WorkCap; and the annual dividend distribution policy, F_Dividend. Likewise, we control the degree of intensity to sales of investments in R&D, capital, and advertising –

F_R&D, F_CAPEX, and F_Advertising. All these variables represent the resources and capabilities of the firms and are valuable and necessary factors to obtain sustainable competitive advantages and to respond to different changes in the business environment.

The effect of institutional pressures is controlled for by including two factors from a principal component analysis PCA) that groups together the effect that regulatory frameworks can have on business commitment to sustainability. The PCA allows us to summarize a set of institutional variables in two uncorrelated factors, which represent the original data, avoiding the multicollinearity that exists between the variables. The values of the Kaiser-Meyer-Olkin test guarantee the validity of this procedure. Table 1 presents a description of the variables used and their relevance in each of the factors used in the analysis to control institutional pressures. The institutional variables, following the work of García-Sánchez et al. (2016), represent the orientation of the legal system towards the protection of stakeholders (CivilLaw, ERRI, SSL, and LRI) and the effectiveness of the judicial system (RL and EJS), as well as aggregate indicators of the commitment at the national level of all the actors with the social and environmental dimensions (EPI, SPI, and GIWPS). These external pressures influence the decisions of the companies because they determine what actions can be promoted in accordance with the norms, values, etc. to receive social approval. By the PCA we have obtained two factors, I_Factor1 and I_Factor2 wit different weight for each variable. In this sense, I_Factor1 groups the institutional variables ERRI, RL, EPI, SPI and GIWPS with a weight higher than +0.3. I_Factor2 groups the institutional variables CivilLaw, LRI, SSL and EJS with a weight higher than $\pm$0.3 due to LRL and EJS have a negative impact.

Table 1. Institutional factors composition

4. RESULTS

4.1. Descriptive analysis

Table 2 shows the main descriptive statistics for the variables that will be used in the estimation of Equations 1 and 2, presented in different panels depending on their numerical or dichotomous nature. The average of the ESG_Perf variable is 45 points out of 100, with a year-on-year increase of 4%, with a sustainability subcommittee in 48% of the companies that make up the sample. The boards have an average of ten directors, almost 18% of whom are women. They perform associates functions for approximately eight years. The board's activity takes the form of an annual average of nine to ten meetings. In relation to the levels of independence of this body, it should be noted that in 64% of the companies, the CEO is also the chairman of the board and approximately half of the members are non-independent directors.

Table 2. Statistical descriptive analysis

Table 3 reflects the correlation matrix, whose coefficients suggest the non-existence of collinearity problems between the variables.

Table 3. Correlation matrix

4.2. Dependency models

In the first column of Panel A of Table 4, the results obtained when estimating Equation 1 with delayed endogenous variables for the ESG_Perf variable can be observed. Columns 3 to 5 incorporate the robust results for the same model before the individualized consideration of the three subdimensions of sustainability. The second column reflects the estimate for the variable relative to the interannual variation.

In relation to the results obtained for the global sustainability score, we observe that the representative variable of gender diversity, B_Diversity, has a significant positive impact (coeff. = 0.0260) for a confidence level of 99%. These results, which are in line with Shoham et al. (2017), Elmagrhi et al. (2019), Yaseen et al. (2019), Govindan et al. (2021), Al-Najjar and Salama (2022) and Wang et al. (2022), among others, showed a positive relationship between the number of female directors and the firms´ sustainability performance. In addition, when we estimate Equation 1 for the three main dimensions of sustainability, we observe that the variable B_Diversity favourably influences the social (coeff. = 0.0392) and environmental (coeff. = 0.0196) dimensions of sustainability for a level of trust of 99%, being irrelevant from the econometric point of view for the governance dimension. The results confirm the evidence from previous studies that show that the female presence does not equally affect the dimensions of sustainability (Nadeem et al., 2020; Nguyen et al., 2021), showing temporal differences in their sustainable preferences (i.e., Rodríguez-Domínguez et al., 2009; García-Sánchez et al. 2015; Nadeem et al., 2017; Monteiro et al., 2021), or due to women are more comfortable with cooperative and supportive corporate aspects (Monzani et al., 2015; Campopiano et al., 2022; García-Sánchez et al., 2023).

The Covid variable has a negative impact (coeff. = -0.473) for a confidence level of 90%, evidencing that the Covid-19 pandemic has meant a slight setback in performance on sustainability issues, although its statistical significance is marginal due to the fact this setback is limited to 2020. However, if we observe the interaction B_Diversity*Covid, it has a marginally significant positive impact (coeff. = 0.0175) at the 90% level. This last result implies that the impact of Covid on sustainability is less negative among firms with a

higher board diversity. So, the presence of women directors partially corrects the slight setback that the business commitment to sustainability has suffered due to the pandemic (Covid + B_Diversity*Covid = -0.473 + 0.0175 = -0.4555). So, the results suggest that the incidental affect derived from the pandemic reinforces the role that the in-group of female directors adopts in decision-making associated with their social identity. However, the impact of board diversity does not prevent a regression in the sustainability strategy.

In relation to the different sustainability dimensions, the variables Covid and B_Diversity*Covid are only significant in the governance model, the former with a negative impact (coeff. = -33.45) and the latter with a positive impact (coeff. = 1.098), both being significant at the 99% level. This evidence shows that directors agreed to promote social and environmental initiatives in pandemic times without affecting business performance in these dimensions. However, in relation to governance practices, the male directors supported adverse measures for the good governance of the companies, encountering opposition from their female colleagues, which partially limited their decisions. This could be indicative of the role that women are playing in organizations, starting to set the boards' agenda and changing how directors behave and the criteria they use in their decisions (Tomkins and Simpson, 2015; Bezemer et al., 2023).

The results are confirmed for the estimation of Equation 1 in the second column based on an explanatory model of the interannual variation of the business performance in terms of sustainability. So, we posit that the results obtained allow us to accept our first hypothesis because the evidence confirms the arguments of the theory of social identity, evidencing the preference that the in-group of women directors have regarding the business commitment to sustainability. In this vein, the cognitive dimensions that female directors use in their decision-making are oriented to attend the social and environmental demands of stakeholders but are less worried about governance matters because the main policies and actions of this last sustainability dimension are also aligned with the interests of male directors. In addition, in the Covid-19 scenario, in- and out-groups made many decisions that maintain environmental and social commitments due to visible effects and impacts in corporate reputations but negatively affect the internal governance dimension. This last adverse impact is lower in firms with a greater number of women directors due to the incidental affect associated with the social identity of women that introduce feminist cognitive criteria to guarantee good governance practices.

Therefore, we throw new evidence regarding the possible existence of the conflict that Becker et al. (2002) raises in relation to the fact that women, when exercising as leaders,

adopt masculine patterns, incongruous with their cognitive traits of solidarity, inclusion, empathy, etc. Thus, our evidence suggests that female directors incorporate their own cognitive approach to the social identity of their gender (in-group) in the exercise of their profession, exerting influence, although limited by their minority position, on the dynamics of traditional corporate structures. (Zhang et al., 2015; Mavin and Grandy, 2016). They promote greater solidarity and sensitivity to social problems (Williams, 2003) and make companies more aware of the business reality (Boulouta, 2013).

In relation to the negative effect that the pandemic could have had on turnover and its impact on sustainability, Panel B shows results for Hypothesis H2. It allows us to test whether this adverse situation entails a conditioning factor on decisions that the in-group of female directors can take in relation to the business commitment to ESG performance. We hope that the turnover does not affect the social identity criteria of women directors and foment an incidental affect like group.

In this regard, the variables B_Diversity and Covid and their interaction have, again, the same effect on the dependent variable ESG_Perf for higher confidence levels, namely, 95% and 99%, if they are significant.

In terms of the effect that the drop in sales figures may have on business sustainability, we observe that the variable DSales_Decline has a negative impact (coeff. = -1.057), significant at the 99% level in any of the years analysed, and being increased in the considered pandemic year (DSales_Decline*Covid: coeff. = -0.0735). This effect has a great impact on the governance dimension and is partially corrected by a greater presence of female directors (B_Diversity*DSales_Decline: coeff. = 0.0392), especially in 2020 (B_Diversity*DSales_Decline*Covid: coeff. = 1.273). This evidence allows us to accept the second hypothesis. Figure 1 includes a visual representation of the effects of the interactions between board diversity, Covid, and turnover on sustainability. It is possible to observe a positive and similar evolution of sustainability and gender diversity, independently of the effect that turnover could entails for these strategies.

The results are robust for the model designed for the variable Var_ESG_Perf, confirming the differences already observed for the dimensions of sustainability. Additionally, we observe that in those companies that have suffered a drop in their economic activity, the presence of female directors favour initiatives on environmental issues. So, the different estimations of Equation 2 confirm that the pandemic has caused relevant adverse economic impacts for companies, but women directors understood that sustainability is the right strategy to the firm´s survival, as Crane and Matten (2021) and Ajeigbe and Ganda (2023)

justified. These are the reasons why they contribute to maintain sustainability commitment and anticipate the different stakeholders' demands to satisfy them. These behaviors are consequently with the feminist innate values of ethics, altruism, empathy, and community orientation (Eagly et al., 2012; Boulouta, 2013) and they have also adopted by women in their private sphere, pay more attention to childcare and housework than their male counterparts (Alon et al., 2020; Lyttelton et al., 2020; Collins et al., 2021; Kabeer et al., 2021).

Regarding the control variables, companies with a greater volume of resources and capacities linked to a greater size and profitability, as well as with more independent and specialized boards, have a higher commitment to sustainability. In such cases, less experience and activity favours business sustainability.

In summary, the results obtained suggest that a greater board diversity leads to a greater sustainable performance as a pattern of behaviour associated with the social identity of the female in-group, which is reinforced by the incidental affect of the Covid-19 pandemic. This role must be contextualized at a time of health and economic crisis that has led to a slight setback in the global business commitment to sustainability. On the other hand, when we consider the three main dimensions of sustainability, the results obtained allow us to understand the marginal effect of the Covid variables and their interaction along with the role that women directors play in this health and economic crisis (versus in periods not characterized by negative or unfavourable exogenous events).

Additionally, the individualized analyses show that the role of social identity is only observed for the social and environmental aspects of business activity, lacking any effect on governance. However, boards that have a greater number of women have limited the significant reverse effect that Covid-19 has had on issues of good governance in companies due to the centralization of decision-making in the management team, the freezing of certain policies for reasons of containing current expenses, need for liquidity, etc. This reveals the role that incidental affection has played in the in-groups of directors according to gender. It promotes masculine, individualistic traits focused on the most economic dimensions of business activity in the out-group of male directors, who have prioritized economic decisions that have led to a setback, especially in company governance. The opposite effect is observed for the in-group of female directors, who have continued to be concerned about the demands of interest groups, including investors and shareholders, guaranteeing the proper functioning of corporate governance.

Table 4. Results from basic analysis: board diversity in a Covid-19 setting

4.3. Robust analysis: Is censured a problem?

The estimates summarized in Table 5 have been obtained with linear regression models and fixed effects for the panel data. To guarantee the robustness of our empirical results with other methodological approaches, and given that the dependent variables take values of between 0 and 100 points, we will use a tobit model for the panel data and censored variables, in which the η term controls the unobservable heterogeneity and ε is the error term.

The results obtained for Equations 1 and 2 are summarized in Table 5. They are highly similar to those reflected in the previous table, guaranteeing that the evidence obtained is robust to changes in the specifications of variables and estimation methods.

Table 5. Robust analysis with tobit regression

4.4. Robust analysis: Instrumental variables to control potential endogeneity problems

The level of gender diversity in the boardroom is an important component of governance performance, and it is possible that this characteristic becomes a more important component of a firm's good governance during the pandemic as firm investment in other governance issues decreases. This fact could entail a potential endogeneity issue that affects the role that female directors exert on the firm's effort to improve governance.

To reject this endogeneity problem, we replace B_Diversity with the value of this variable in the previous period. In other words, the delay of one period of the variable has been used as an instrument. It is possible to observe in Table 6 that the results obtained are similar to the previous approach. So, our results are not affected by endogeneity issues.

Table 6. Robust analysis for endogeneity issues

5. COMPLEMENTARY RESULTS

The results obtained show that the decisions made by the group of directors as a reference to a social identity favour business sustainability, being reinforced by incidental affection in times of health and economic crisis, even in companies that have suffered a recession in their sales figures.

Thus, it is of interest to provide additional evidence regarding whether the incidental affect associated with Covid-19 is caused by the situations and hard times that we had to experience globally in 2020 – i.e., confinements, infections with serious symptoms, deaths

– and that have caused psychological dents, reinforcing social identity or corresponding to an effect that emerges in any context of economic recession.

We have proceeded to expand the analysis sample with data relating to the years 2005–2020, a period of analysis that allows us to consider the global economic crisis that occurred in 2008 and 2009. Here, two new dummy variables have been designed, Crisis and Finan_Crisis. The second of these variables was assigned the value of 1 for two years, 2008 and 2009, and the value of 0 otherwise. The Crisis variable includes consideration of these years of the financial crisis and the year 2020, which had been reflected in the Covid variable.

The evidence obtained, presented in Table 7, shows that the joint consideration of both periods of crisis does not imply a setback in the levels of business sustainability considered in aggregate, as can be seen in the first column. The disaggregated inclusion of both crises, shown in the second column, allows us to confirm the previous results, with the marginal negative effect of the Covid variable that had been observed disappearing. However, the results of both models show that the higher number of female directors favours greater sustainability, especially in companies hit by the economic recession, indicating that, in all cases, the greatest effect of incidental affection occurs in the pandemic period.

Table 7. Results for complementary models: global crisis effects

CONCLUSIONS

Covid-19 and its containment measures entail health, economic, and social externalities that different actors – i.e., academics, politicians, investors – consider should be incorporated into business sustainability strategies in a scenario of economic slowdown with important consequences for companies. This paper analyses the impact that the incidental affect of Covid-19 entails, observing whether the effects of social identity associated with gender diversity are enhanced, causing directors to react to health, economic, and social threats in accordance with the values determined by their belonging to the in-group and foster a greater corporate commitment to sustainability.

The evidence obtained for an unbalanced sample of 4,821 multinationals in the 2015–2020 period confirms the hypotheses raised, showing that the adverse effect that the pandemic has had on the level of business commitment to its stakeholders is less in firms with a higher number of women on their boards. The setback in terms of sustainability caused by Covid-19 has mainly affected good governance policies, causing a previously unseen female

involvement. In addition, the directors guarantee the social and environmental commitment of previous years, their contribution being especially relevant in companies whose turnover has been hit hardest by the pandemic.

Our evidence contribute the existing knowledge relating the consequences of the pandemic for business performance and strategies due to the papers that have analyzed business reactions suggest the existence of quite different decisions, being necessary to broaden the knowledge regarding what companies have done to respond to this global crisis and the reasons that have prompted some companies to continue promoting sustainable projects in times of economic recession. Our gender hypotheses are of great interest to the academia due to the existence of a "glass ceiling" that hinders women's access to positions of power, despite having equal or greater qualifications, skills, and merits than their male counterparts. In addition, a growing number of papers suggest that women's opinions are not always taken into account, especially when they are a minority on boards. So, our evidence will contribute to a more sustainable business management, making firms aware of the benefits associated with gender diversity in uncertain environments.

The implications derived from this study are also important both from academics and professionals. From a theoretical side, our work contributes to show a more complete picture of the impact of female directors on corporate responsibility in different contexts and reveals areas of greatest influence within the three most important dimensions of sustainability. Thus, determining the role of women directors from a gender perspective helps to understand the findings in relation to those found in previous literature, providing explanations regarding the prioritization of issues with a more economic than social impact in a time of economic recession derived from a worldwide crisis. Thus, it is recommended that future research should focus on determining the nexus between a firm's performance in specific social areas during the time of the pandemic and the levels of empathy of the board.

From a practical side, our research helps to understand the corporate governance structures that could promote different commitments regarding the different dimensions or areas of sustainability. Managers, regulators, investors can learn more about business sustainability strategies and how they can be affected by unforeseeable events, considering the composition of the main decision-making body. Additionally, it allows us to understand the empathy of the directors and their perception of sustainability and their priorities.

However, the existence of a set of limitations that entails unresolved issues within this line of research and that should be considered in future works cannot be ignored. An important limitation is the use of global measures of the dimensions of sustainability considered, making

it necessary to address its components in a more disaggregated manner and linked to the demands arising from the pandemic. Additionally, researchers should collect primary data by surveys and/or interviews with directors to find out their opinion and influence on the decision-making process. Also, it would be advisable to approach this research with larger samples for different countries determined by culture and gender stereotypes with the aim of contrasting whether these stereotyped behaviours are maintained in environments with different levels of gender equality or with legislative frameworks that imply the existence of gender quotas on boards. Finally, future research should improve our results by including the analysis of attributes other than gender such as background, age, among others.

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Table 1. Institutional factors composition

Variable	Definition	I_Factor1	I_Factor2
CivilLaw	Dummy, takes value 1 for geographic zones with a civil law system	0.0225	0.5714
ERRI	Environmental Regulatory Regime Index measures major aspects of environmental regulation	0.4157	-0.1415
LRI	Labour Rights Index measures major aspects of employment regulation	-0.2561	-0.4560
SSL	Social Security Laws Index (Botero et al., 2004)	-0.0583	0.5443
RL	Assessment of the law-and-order tradition (La Porta et al., 1998)	0.4206	-0.0082
EJS	Integrity and efficiency of the legal environment (La Porta et al., 1998)	0.2205	-0.4780
EPI	Environmental Performance Index at country level	0.4406	0.2929
SPI	Social Progress Index measures social progress at country level	0.4337	0.0396
GIWPS	Women, Peace and Security Index measures women's inclusion, security and justice in countries	0.4172	-0.0141
	Kaiser-Meyer-Olkin measure of sampling adequacy	0.6826	
	Rotation: orthogonal varimax (Kaiser off) – Rho	0.7869	

Table 2. Statistical descriptive analysis

Panel A. Numerical variables

Variable	Mean	Std. dev.
ESG_Perf	45.01	20.51
Var_ESG_Perf	4.00	24.00
Env_Perf	13.26	11.85
Social_Perf	43.65	19.62
Gov_Perf	39.42	31.00
B_Diversity	17.85	13.42
B_Size	9.74	3.18
B_Activity	9.48	5.52
B_Indep	51.93	36.45
B_Tenure	7.63	3.99
F_Age	3.20	0.87
F_Size	15.28	1.86
F_ROA	3.32	17.33
F_Leverage	51.88	48.28
F_WorkCap	118.00	202.00
F_R&D	11.30	2.81
F_Advertising	96.60	102.00
F_CAPEX	52.50	63.00
F_Dividend	28.10	38.00

Panel B. Dichotomous variables

	Relative Frequency
Covid	0.15
DSales_Decline	0.26
DSales_Decline*Covid	0.08
CEOduality	0.64
CSRCommittee	0.48

Table 3. Bivariate correlation matrix

		1	2	3	4	5	6	7
1	ESG_Perf	1						
2	Var_ESG_Perf	0,07***	1					
3	Env_Perf	0,83***	0,02***	1				
4	Social_Perf	0,87***	0,06***	0,73***	1			
5	Gov_Perf	0,48***	0,09***	0,22***	0,25***	1		
6	B_Diversity	0,32***	0,01*	0,24***	0,30***	0,19***	1	
7	Covid	0,08***	-0,02***	0,06***	0,05***	0,02***	0,14***	1
8	DSales_Decline	0,09***	-0,02***	0,10***	0,05***	0,03***	0,07***	0,26***
9	DSales_Decline*Covid	0,08***	-0,02***	0,08***	0,05***	0,02***	0,12***	0,70***
10	B_Size	0,30***	-0,01	0,32***	0,27***	0,02***	0,07***	-0,03***
11	B_Activity	0,07***	-0,03***	0,06***	0,05***	0,03***	-0,01*	0,08***
12	B_Indep	0,18***	0,02***	0,11***	0,18***	0,13***	0,18***	0,05***
13	CEOduality	0,07***	0,01*	0,05***	0,02***	0,07***	0,00	0,02**
14	CSRCommittee	0,61***	0,01	0,64***	0,56***	0,18***	0,16***	0,08***
15	B_Tenure	-0,09***	-0,02**	-0,11***	-0,11***	-0,01	-0,06***	0,01**
16	F_Age	0,23***	-0,06***	0,24***	0,16***	0,06***	0,03***	0,04***
17	F_Size	0,48***	-0,01	0,47***	0,40***	0,16***	0,09***	0,01**
18	F_ROA	0,11***	0,03***	0,11***	0,07***	0,06***	0,06***	-0,04***
19	F_Leverage	0,01	0,00	0,01*	0,03***	-0,02***	-0,08***	-0,01*
20	F_WorkCap	0,03***	0,00	0,02***	0,03***	0,02***	-0,04***	0,00
21	F_R&D	0,06***	0,00	0,04***	0,05***	0,05***	-0,03***	0,00
22	F_Advertising	0,06***	-0,01	0,05***	0,05***	0,05***	-0,08***	-0,01
23	F_CAPEX	0,07***	-0,01	0,05***	0,06***	0,03***	-0,07***	-0,01
24	F_Dividend	0,05***	0,00	0,03***	0,06***	0,02***	-0,05***	0,00
25	I_Factor1	0,01	0,02**	0,01	-0,04***	0,04***	0,18***	0,01
26	I_Factor2	0,33***	-0,02**	0,40***	0,29***	0,01	0,12	-0,01

		8	9	10	11	12	13	14
8	DSales_Decline	1						
9	DSales_Decline*Covid	0,50***	1					
10	B_Size	0,00	0,00	1				
11	B_Activity	0,08***	0,09***	0,02***	1			
12	B_Indep	0,03***	0,03***	0,02***	0,01	1		
13	CEOduality	0,03***	0,02**	-0,01	0,13***	0,01	1	
14	CSRCommittee	0,09***	0,08***	0,26***	0,06***	0,08***	0,10***	1
15	B_Tenure	-0,03***	0,01	0,01	-0,20***	-0,20***	-0,26***	-0,11***
16	F_Age	0,08***	0,06***	0,22***	0,05***	-0,12***	-0,01*	0,22***
17	F_Size	0,02***	0,03***	0,52***	0,11***	0,07***	-0,01	0,34***
18	F_ROA	-0,08***	-0,06***	0,06***	-0,04***	-0,02***	-0,02***	0,08***
19	F_Leverage	0,00	0,00	-0,08***	0,01**	-0,03***	0,05***	0,01
20	F_WorkCap	0,00	0,00	-0,02***	0,01	-0,01	0,00	0,02***
21	F_R&D	0,00	-0,01	0,01	0,00	0,01**	-0,02***	0,03***
22	F_Advertising	0,00	-0,01	-0,01	0,03***	-0,01**	0,01	0,04***
23	F_CAPEX	0,00	-0,01	0,00	0,05***	0,00	0,01*	0,04***
24	F_Dividend	0,00	0,00	-0,03***	0,09***	-0,01**	0,03***	0,02***
25	I_Factor1	0,03***	0,02**	-0,11***	0,10***	-0,02**	0,06***	-0,09***

26	I_Factor2	0,06***	0,03***	0,26***	0,19***	0,01	0,18***	0,33***
		15	16	17	18	19	20	21
15	B_Tenure	1						
16	F_Age	0,25***	1					
17	F_Size	-0,08***	0,18***	1				
18	F_ROA	0,08***	0,08***	0,15**	1			
19	F_Leverage	-0,04***	0,04***	0,00	0,02***	1		
20	F_WorkCap	-0,01**	0,03***	0,05***	0,02***	0,15***	1	
21	F_R&D	-0,03***	0,02***	0,06***	0,01	0,02***	0,76***	1
22	F_Advertising	-0,05***	0,05***	0,08***	0,02**	0,30***	0,81***	0,84***
23	F_CAPEX	-0,05***	0,03***	0,08***	0,01*	0,30***	0,70***	0,77***
24	F_Dividend	-0,04***	0,02***	0,06***	0,02***	0,25***	0,47***	0,30***
25	I_Factor1	-0,09***	-0,05***	-0,03***	-0,04***	-0,15***	-0,03***	-0,03***
26	I_Factor2	-0,22***	0,18***	0,26***	0,06***	0,18***	0,04***	0,04***
		22	23	24	25	26		
22	F_Advertising	1						
23	F_CAPEX	0,84***	1					
24	F_Dividend	0,48***	0,53***	1				
25	I_Factor1	-0,05***	-0,05***	-0,05***	1			
26	I_Factor2	0,07***	0,06***	0,06***	0,01**	1		

Table 4. Results from basic analysis: board diversity in a Covid-19 setting

Panel A. Board diversity in a Covid-19 setting

	Equation 1				
	ESG_Perf coeff. (std.error)	Var_ESG_Perf coeff. (std.error)	Env_Perf coeff. (std.error)	Social_Perf coeff. (std.error)	Gov_Perf coeff. (std.error)
B_Diversity	0.0260***	0.000458***	0.0196***	0.0392***	0.161
	(0.00481)	(0.000165)	(0.00282)	(0.00517)	(0.133)
Covid	-0.473*	-0.0154*	-0.0392	-0.0753	-33.45***
	(0.249)	(0.00882)	(0.148)	(0.271)	(7.447)
B_Diversity*Covid	0.0175*	0.000543*	0.00745	-0.00341	1.098***
	(0.00924)	(0.000327)	(0.00550)	(0.0100)	(0.276)
ESG_Perft-1	0.893***				
	(0.00385)				
Env_Perft-1			0.902***		
			(0.00393)		
Social_Perft-1				0.877***	
				(0.00393)	
Gov_Perft-1					0.812***
					(0.00482)
B_Size	-0.00348	-0.000200	-0.00552	0.0361	-2.014***
	(0.0211)	(0.000720)	(0.0126)	(0.0229)	(0.589)
B_Activity	-0.0209*	-0.000821**	-0.0224***	-0.0224*	0.515
	(0.0119)	(0.000409)	(0.00708)	(0.0129)	(0.336)

B_Indep	0.00340**	0.000102*	0.000980	0.00468***	0.141***
	(0.00164)	(5.64e-05)	(0.000970)	(0.00177)	(0.0463)
CEOduality	-0.140	-0.00487	-0.0537	-0.0702	2.184
	(0.115)	(0.00390)	(0.0682)	(0.124)	(3.202)
CSRCommittee	0.784***	0.0197***	0.471***	0.639***	10.30***
	(0.139)	(0.00476)	(0.0858)	(0.146)	(3.487)
B_Tenure	-0.074***	-0.00215***	-0.0244***	-0.0567***	-0.855**
	(0.0155)	(0.000526)	(0.00923)	(0.0167)	(0.430)
F_Age	-0.0587	-0.00227	-0.00423	-0.0132	-1.908
	(0.0649)	(0.00220)	(0.0387)	(0.0696)	(1.773)
F_Size	0.418***	0.00982***	0.264***	0.329***	5.604***
	(0.0396)	(0.00134)	(0.0231)	(0.0415)	(1.039)
F_ROA	0.0106***	0.000296***	0.00719***	0.000707	0.204***
	(0.00274)	(9.48e-05)	(0.00164)	(0.00297)	(0.0783)
F_Leverage	0.000461	1.24e-05	0.000622	0.000225	0.0236
	(0.000681)	(2.31e-05)	(0.000406)	(0.000736)	(0.0188)
F_WorkCap	0.000	0.000	0.000	9.18e-11	-5.43e-10
	(1.04e-10)	(0.000)	(6.18e-11)	(1.12e-10)	(2.91e-09)
F_R&D	5.46e-10	0.000	7.74e-10	-2.57e-10	1.04e-08
	(8.09e-10)	(0.000)	(4.83e-10)	(8.75e-10)	(2.24e-08)
F_Advertising	0.000	0.000	-2.09e-10*	1.26e-10	2.56e-09
	(2.00e-10)	(0.000)	(1.19e-10)	(2.16e-10)	(5.54e-09)
F_CAPEX	-1.38e-10	0.000	0.000	-1.24e-10	-7.68e-09
	(2.04e-10)	(0.000)	(1.22e-10)	(2.21e-10)	(5.82e-09)
F_Dividend	-4.45e-10	0.000	-4.40e-10	-7.32e-10	9.60e-09
	(9.90e-10)	(0.000)	(5.90e-10)	(1.07e-09)	(2.88e-08)
I_Factor1	0.0309	0.00112	-0.0137	-0.0903***	2.091***
	(0.0264)	(0.000892)	(0.0158)	(0.0286)	(0.722)
I_Factor2	0.189***	0.00394**	0.0772***	0.105**	-0.249
	(0.0481)	(0.00163)	(0.0289)	(0.0518)	(1.311)
industry	yes	yes	yes	yes	yes
country	yes	yes	yes	yes	yes
year	yes	yes	yes	yes	yes
R-squared	0.975***	0.918***	0.974***	0.968***	0.932***

Panel B. Board diversity in a Covid-19 setting: firms´ sales decline

	Equation 2				
	ESG_Perf coeff. (std.error)	Var_ESG_Perf coeff. (std.error)	Env_Perf coeff. (std.error)	Social_Perf coeff. (std.error)	Gov_Perf coeff. (std.error)
B_Diversity	0.0166***	0.0351*	0.0196***	0.0388***	0.251
	(0.00523)	(0.0195)	(0.00307)	(0.00563)	(0.197)
Covid	-0.882**	-0.0257**	-0.222	-0.0271	-43.21***
	(0.362)	(0.0128)	(0.216)	(0.394)	(10.78)
B_Diversity*Covid	0.0471***	0.00118**	0.0182**	0.0102	1.771***
	(0.0137)	(0.000486)	(0.00819)	(0.0149)	(0.408)
DSales_Decline	-1.057***	-0.0313***	-0.154	-0.388*	-35.87***
	(0.209)	(0.00734)	(0.124)	(0.227)	(6.144)
B_Diversity	0.0392***	0.00127***	-0.000244	0.00104	1.703***

*DSales_Decline	(0.00876)	(0.000308)	(0.00522)	(0.00951)	(0.258)
DSales_Decline*Covid	-0.0735***	-0.00187***	-0.0178	-0.0214	-2.200***
	(0.0194)	(0.000683)	(0.0115)	(0.0210)	(0.574)
B_Diversity	1.273**	0.0359**	0.0182**	0.0155	38.15**
*DSales_Decline*Covid	(0.516)	(0.0182)	(0.00819)	(0.561)	(15.28)
ESG_Perft-1	0.893***				
	(0.00385)				
Env_Perft-1			0.902***		
			(0.00393)		
Social_Perft-1				0.877***	
				(0.00392)	
Gov_Perft-1					0.812***
					(0.00481)
B_Size	-0.00407	-0.000199	-0.00637	0.0345	-1.985***
	(0.0211)	(0.000720)	(0.0126)	(0.0228)	(0.589)
B_Activity	-0.0195	-0.000785*	-0.0219***	-0.0212*	0.547
	(0.0119)	(0.000408)	(0.00708)	(0.0128)	(0.336)
B_Indep	0.00321**	9.67e-05*	0.000960	0.00466***	0.133***
	(0.00163)	(5.64e-05)	(0.000970)	(0.00177)	(0.0463)
CEOduality	-0.147	-0.00516	-0.0532	-0.0694	1.762
	(0.114)	(0.00390)	(0.0682)	(0.123)	(3.198)
CSRCommittee	0.798***	0.0201***	0.470***	0.656***	10.53***
	(0.139)	(0.00476)	(0.0858)	(0.146)	(3.484)
B_Tenure	-0.0770***	-0.00224***	-0.0251***	-0.0585***	-0.955**
	(0.0154)	(0.000526)	(0.00923)	(0.0167)	(0.430)
F_Age	-0.0410	-0.00184	0.000739	0.00214	-1.526
	(0.0648)	(0.00220)	(0.0387)	(0.0696)	(1.774)
F_Size	0.420***	0.00983***	0.265***	0.335***	5.555***
	(0.0395)	(0.00134)	(0.0231)	(0.0414)	(1.039)
F_ROA	0.0105***	0.000297***	0.00708***	0.000483	0.209***
	(0.00274)	(9.48e-05)	(0.00164)	(0.00297)	(0.0782)
F_Leverage	0.000537	1.49e-05	0.000614	0.000218	0.0270
	(0.000680)	(2.31e-05)	(0.000406)	(0.000734)	(0.0188)
F_WorkCap	0.000	0.000	0.000	8.95e-11	-5.98e-10
	(1.03e-10)	(0.000)	(6.18e-11)	(1.12e-10)	(2.90e-09)
F_R&D	5.86e-10	0.000	7.83e-10	-2.29e-10	1.15e-08
	(8.08e-10)	(0.000)	(4.83e-10)	(8.73e-10)	(2.24e-08)
F_Advertising	0.000	0.000	-2.10e-10*	1.21e-10	2.29e-09
	(1.99e-10)	(0.000)	(1.19e-10)	(2.15e-10)	(5.53e-09)
F_CAPEX	-1.39e-10	0.000	0.000	-1.24e-10	-7.70e-09
	(2.04e-10)	(0.000)	(1.22e-10)	(2.21e-10)	(5.81e-09)
F_Dividend	-4.45e-10	0.000	-4.37e-10	-7.48e-10	9.34e-09
	(9.88e-10)	(0.000)	(5.90e-10)	(1.07e-09)	(2.88e-08)
I_Factor1	0.0335	0.00118	-0.0127	-0.0874***	2.128***
	(0.0264)	(0.000891)	(0.0158)	(0.0285)	(0.721)
I_Factor2	0.194***	0.00400**	0.0792***	0.113**	-0.211
	(0.0480)	(0.00163)	(0.0289)	(0.0517)	(1.310)
industry	yes	yes	yes	yes	yes

country	yes	yes	yes	yes	yes
year	yes	yes	yes	yes	yes
R-squared	0.975***	0.906***	0.974***	0.968***	0.932***

Tabla 5. Robust analysis with Tobit regression

Panel A. Board diversity in a Covid-19 setting					
	ESG_Perf coeff. (std.error)	Var_ESG_Perf coeff. (std.error)	Env_Perf coeff. (std.error)	Social_Perf coeff. (std.error)	Gov_Perf coeff. (std.error)
B_Diversity	0.0178***	0.000717***	0.0243***	0.0241***	0.0350
	(0.00412)	(0.000116)	(0.00375)	(0.00444)	(0.109)
Covid	-0.604***	-0.0145**	-0.00355	-0.398*	-6.21e-09**
	(0.220)	(0.00637)	(0.167)	(0.239)	(2.56e-09)
B_Diversity*Covid	0.0231***	0.000514**	0.00880	0.00534	0.160**
	(0.00853)	(0.000246)	(0.00638)	(0.00926)	(0.0691)
Panel B. Board diversity in a Covid-19 setting: firms´ sales decline					
	ESG_Perf coeff. (std.error)	Var_ESG_Perf coeff. (std.error)	Env_Perf coeff. (std.error)	Social_Perf coeff. (std.error)	Gov_Perf coeff. (std.error)
B_Diversity	0.0105**	0.000895***	0.0236***	0.0256***	0.0496
	(0.00458)	(0.000129)	(0.00404)	(0.00495)	(0.0732)
Covid	-0.721**	-0.0122	0.0124	-0.272	-5.751
	(0.313)	(0.00898)	(0.241)	(0.339)	(3.661)
B_Diversity*Covid	0.0433***	0.000796**	0.0151	0.0157	0.315*
	(0.0125)	(0.000357)	(0.00947)	(0.0135)	(0.163)
DSales_Decline	-0.812***	-0.0191***	-0.156	-0.238	-8.819***
	(0.187)	(0.00542)	(0.149)	(0.203)	(2.277)
B_Diversity*DSales_Decline	0.0294***	0.000726***	0.00254	-0.00583	0.482***
	(0.00815)	(0.000236)	(0.00639)	(0.00885)	(0.111)
DSales_DeclineCovid	-0.0509***	-0.000879*	-0.0110	-0.0115	-0.773***
	(0.0177)	(0.000511)	(0.0136)	(0.0192)	(0.235)
B_Diversity*DSales_Decline*Covid	0.709***	0.0526***	1.118***	0.772	7.263***
	(0.119)	(0.00297)	(0.112)	(0.626)	(1.875)

Table 6. Robust Results from endogeneity issues

Panel A. Board diversity in a Covid-19 setting					
	ESG_Perf coeff. (std.error)	Var_ESG_Perf coeff. (std.error)	Env_Perf coeff. (std.error)	Social_Perf coeff. (std.error)	Gov_Perf coeff. (std.error)
B_Diversity	0.0251***	0.000320**	0.0196***	0.0377***	0.168
	(0.00480)	(0.000159)	(0.00281)	(0.00515)	(0.133)
Covid	-0.472*	-0.0163*	-0.0392	-0.0716	-33.46***
	(0.249)	(0.00897)	(0.148)	(0.271)	-7.447

B_Diversity*Covid	0.0176*	0.000501*	0.00745	-0.00334	1.097***
	(0.00924)	(0.000133)	(0.00550)	(0.0100)	(0.276)
Panel B. Board diversity in a Covid-19 setting: firms´ sales decline					
	ESG_Perf coeff. (std.error)	Var_ESG_Perf coeff. (std.error)	Env_Perf coeff. (std.error)	Social_Perf coeff. (std.error)	Gov_Perf coeff. (std.error)
B_Diversity	0.0157***	0.000615***	0.0195***	0.0373***	0.245*
	(0.00522)	(0.000175)	(0.00307)	(0.00561)	(0.147)
Covid	-0.870**	-0.0244*	-0.222	-0.00619	-43.30***
	(0.362)	(0.0130)	(0.216)	(0.394)	(10.78)
B_Diversity*Covid	0.0467***	0.00102**	0.0182**	0.00952	1.774***
	(0.0137)	(0.000492)	(0.00819)	(0.0149)	(0.408)
DSales_Decline	-1.058***	-0.0311***	-0.154	-0.390*	-35.86***
	(0.209)	(0.00741)	(0.124)	(0.227)	-6.144
B_Diversity*DSales_Decline	0.0392***	0.00121***	-0.000240	0.00118	1.702***
	(0.00876)	(0.000311)	(0.00522)	(0.00952)	(0.258)
DSales_Decline*Covid	-0.0729***	-0.00162**	-0.0178	-0.0203	-2.206***
	(0.0194)	(0.000692)	(0.0115)	(0.0211)	(0.574)
B_Diversity*DSales_Decline*Covid	1.256**	0.0318*	0.380*	-0.0139	38.29**
	(0.516)	(0.0184)	(0.107)	(0.561)	(15.28)

Table 7. Results for complementary models: global Crisis effects

	Model 1		Model 2
	ESG_Perf coeff. (std.error)	ESG_Perf coeff. (std.error)	ESG_Perf coeff. (std.error)
B_Diversity	0.0329***	0.0752***	0.0252***
	(0.00369)	(0.0200)	(0.00407)
Crisis (2008, 2009 & 2020)	0.000527		0.0133
	(0.00744)		(0.0106)
B_Diversity*Crisis	0.684***		0.890***
	(0.164)		(0.223)
Finan_Crisis (2008 & 2009)		0.00978	
		(0.00988)	
B_Diversity*Finan_Crisis		0.000672	
		(0.000679)	
Covid (2020)		-0.000200	
		(0.0132)	
B_Diversity*Covid		0.00162*	
		(0.000919)	
DSales_Decline			-0.863***
			(0.145)
B_Diversity*DSales_Decline			0.0319***
			(0.00704)
DSales_DeclineCrisis			-0.0609

			(0.337)
B_Diversity*DSales_DeclineCrisis			0.0371**
			(0.0153)
ESG_Perft-1	0.891***	0.891***	0.891***
	(0.00272)	(0.00272)	(0.00272)
B_Size	0.0175	-0.000267	0.0163
	(0.0135)	(0.000654)	(0.0135)
B_Activity	-0.0161*	-0.000179	-0.0143*
	(0.00838)	(0.000405)	(0.00838)
B_Indep	0.00531***	2.77e-05	0.00530***
	(0.00119)	(5.68e-05)	(0.00119)
CEOduality	-0.0576	-0.00867**	-0.0670
	(0.0819)	(0.00395)	(0.0819)
CSRCommittee	0.901***	-0.0189***	0.923***
	(0.0965)	(0.00410)	(0.0965)
B_Tenure	-0.0701***	-0.00146***	-0.0711***
	(0.0112)	(0.000539)	(0.0111)
F_Age	0.0346	-0.00625***	0.0457
	(0.0438)	(0.00210)	(0.0438)
F_Size	0.420***	0.000763	0.425***
	(0.0281)	(0.00128)	(0.0281)
F_ROA	0.0147***	0.000302**	0.0140***
	(0.00255)	(0.000123)	(0.00255)
F_Leverage	-3.26e-05	2.88e-07	8.73e-05
	(0.000527)	(2.55e-05)	(0.000527)
F_WorkCap	0.000	0.000	0.000
	(7.23e-11)	(0.000)	(7.22e-11)
F_R&D	-3.73e-10	0.000	-3.26e-10
	(5.02e-10)	(0.000)	(5.01e-10)
F_Advertising	1.06e-10	0.000	9.85e-11
	(1.17e-10)	(0.000)	(1.17e-10)
F_CAPEX	1.21e-10	0.000	1.11e-10
	(1.39e-10)	(0.000)	(1.39e-10)
F_Dividend	-1.86e-10	0.000	-1.77e-10
	(7.85e-10)	(0.000)	(7.85e-10)
I_Factor1	-0.0186	0.000371	-0.0162
	(0.0191)	(0.000925)	(0.0191)
I_Factor2	0.209***	-0.00109	0.209***
	(0.0336)	(0.00161)	(0.0336)
industry	yes	yes	yes
country	yes	yes	yes
year	yes	yes	yes
R-squared	0.976***	0.909***	0.976***

Figure 1. Plotting the effects of the interactions of Board Diversity, Covid and Turnover on sustainability

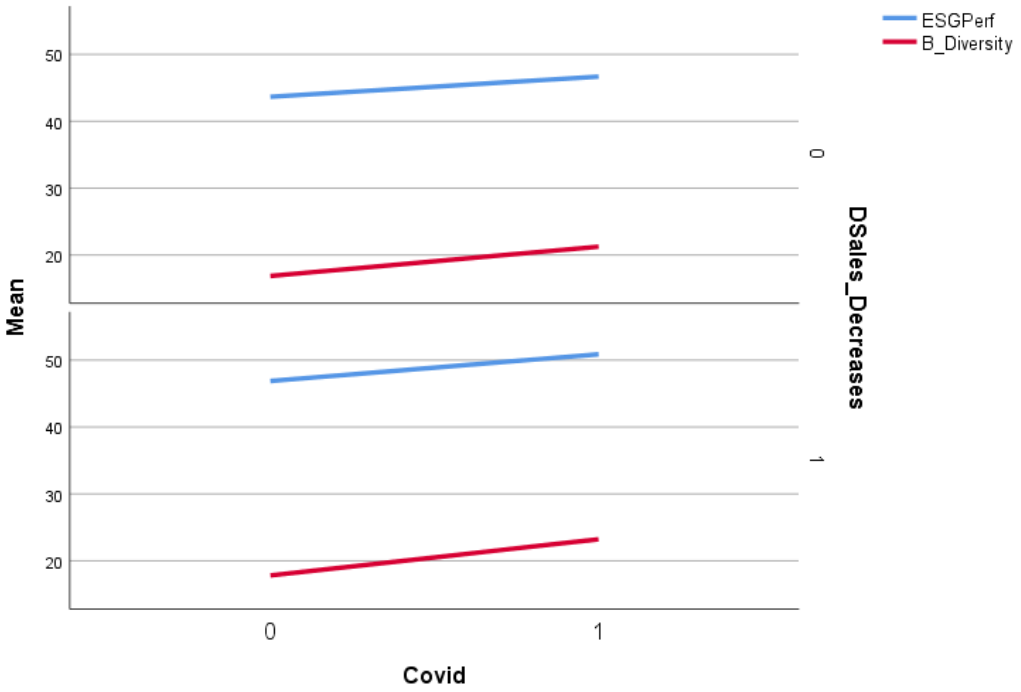

Table 3. Bivariate correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	ESG_Perf	1												
2	Var_ESG_Perf	0,07***	1											
3	Env_Perf	0,83***	0,02***	1										
4	Social_Perf	0,87***	0,06***	0,73***	1									
5	Gov_Perf	0,48***	0,09***	0,22***	0,25***	1								
6	B_Diversity	0,32***	0,01*	0,24***	0,30***	0,19***	1							
7	Covid	0,08***	-0,02***	0,06***	0,05***	0,02***	0,14***	1						
8	DSales_Decline	0,09***	-0,02***	0,10***	0,05***	0,03***	0,07***	0,26***	1					
9	DSales_Decline*Covid	0,08***	-0,02***	0,08***	0,05***	0,02***	0,12***	0,70***	0,50***	1				
10	B_Size	0,30***	-0,01	0,32***	0,27***	0,02***	0,07***	-0,03***	0	0	1			
11	B_Activity	0,07***	-0,03***	0,06***	0,05***	0,03***	-0,01*	0,08***	0,08***	0,09***	0,02***	1		
12	B_Indep	0,18***	0,02***	0,11***	0,18***	0,13***	0,18***	0,05***	0,03***	0,03***	0,02***	0,01	1	
13	CEOduality	0,07***	0,01*	0,05***	0,02***	0,07***	0	0,02**	0,03***	0,02**	-0,01	0,13***	0,01	1
14	CSRCommittee	0,61***	0,01	0,64***	0,56***	0,18***	0,16***	0,08***	0,09***	0,08***	0,26***	0,06***	0,08***	0,10***
15	B_Tenure	-0,09***	-0,02**	-0,11***	-0,11***	-0,01	-0,06***	0,01**	-0,03***	0,01	0,01	-0,20***	-0,20***	-0,26***
16	F_Age	0,23***	-0,06***	0,24***	0,16***	0,06***	0,03***	0,04***	0,08***	0,06***	0,22***	0,05***	-0,12***	-0,01*
17	F_Size	0,48***	-0,01	0,47***	0,40***	0,16***	0,09***	0,01**	0,02***	0,03***	0,52***	0,11***	0,07***	-0,01
18	F_ROA	0,11***	0,03***	0,11***	0,07***	0,06***	0,06***	-0,04***	-0,08***	-0,06***	0,06***	-0,04***	-0,02***	-0,02***
19	F_Leverage	0,01	0	0,01*	0,03***	-0,02***	-0,08***	-0,01*	0	0	-0,08***	0,01**	-0,03***	0,05***
20	F_WorkCap	0,03***	0	0,02***	0,03***	0,02***	-0,04***	0	0	0	-0,02***	0,01	-0,01	0
21	F_R&D	0,06***	0	0,04***	0,05***	0,05***	-0,03***	0	0	-0,01	0,01	0	0,01**	-0,02***
22	F_Advertising	0,06***	-0,01	0,05***	0,05***	0,05***	-0,08***	-0,01	0	-0,01	-0,01	0,03***	-0,01**	0,01
23	F_CAPEX	0,07***	-0,01	0,05***	0,06***	0,03***	-0,07***	-0,01	0	-0,01	0	0,05***	0	0,01*
24	F_Dividend	0,05***	0	0,03***	0,06***	0,02***	-0,05***	0	0	0	-0,03***	0,09***	-0,01**	0,03***
25	I_Factor1	0,01	0,02**	0,01	-0,04***	0,04***	0,18***	0,01	0,03***	0,02**	-0,11***	0,10***	-0,02**	0,06***
26	I_Factor2	0,33***	-0,02**	0,40***	0,29***	0,01	0,12	-0,01	0,06***	0,03***	0,26***	0,19***	0,01	0,18***

		14	15	16	17	18	19	20	21	22	23	24	25	26
14	CSRCommittee	1												
15	B_Tenure	-0,11***	1											

16	F_Age	0,22***	0,25***	1										
17	F_Size	0,34***	-0,08***	0,18***	1									
18	F_ROA	0,08***	0,08***	0,08***	0,15**	1								
19	F_Leverage	0,01	-0,04***	0,04***	0	0,02***	1							
20	F_WorkCap	0,02***	-0,01**	0,03***	0,05***	0,02***	0,15***	1						
21	F_R&D	0,03***	-0,03***	0,02***	0,06***	0,01	0,02***	0,76***	1					
22	F_Advertising	0,04***	-0,05***	0,05***	0,08***	0,02**	0,30***	0,81***	0,84***	1				
23	F_CAPEX	0,04***	-0,05***	0,03***	0,08***	0,01*	0,30***	0,70***	0,77***	0,84***	1			
24	F_Dividend	0,02***	-0,04***	0,02***	0,06***	0,02***	0,25***	0,47***	0,30***	0,48***	0,53***	1		
25	I_Factor1	-0,09***	-0,09***	-0,05***	-0,03***	-0,04***	-0,15***	-0,03***	-0,03***	-0,05***	-0,05***	-0,05***	1	
26	I_Factor2	0,33***	-0,22***	0,18***	0,26***	0,06***	0,18***	0,04***	0,04***	0,07***	0,06***	0,06***	0,01**	1