



# Board gender diversity and ESG performance: The mediating role of temporal orientation in South Africa context

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## ABSTRACT

Prevailing research on the interaction between board gender diversity (BGD) and Environmental, Social, and Governance (ESG) performance presents equivocal findings, particularly in the context of developing countries. This study ventures into an exploratory examination of this association, situated in the socio-cultural milieu of South Africa, a region where the lower social status of women often leads to a bias towards short-term perspectives. Drawing on the role congruity theory of prejudice toward female leaders, this study aims to investigate the mediating role of short-term orientation (SHRT) in the BGD-ESG relationship. We further explore how the preference of female directors toward SHRT varies depending on their tenure on the board and across family and non-family firms. The empirical findings, drawn from an examination of publicly listed non-financial firms on the Johannesburg Stock Exchange (JSE) from 2015 to 2020, indicate a negative relationship between BGD and ESG, with SHRT predominantly mediating this association. Additionally, the tenure of female directors attenuates their preference for SHRT. Notably, we found the effect of BGD on SHRT is less pronounced in family firms, where the choices of female directors are more aligned with the family firm's long-term orientation. Our findings contribute to both theory and practice by advancing our understanding of the BGD-ESG relationship and providing practical implications for organizations, leaders, and policymakers.

## 1. Introduction

The Environmental, Social, and Governance (ESG) performance of firms has been the focus of intensive scrutiny and interest among researchers, policymakers, practitioners, and investors over recent decades (Pacelli et al., 2022; Rajesh, 2020; Yarram and Adapa, 2022). A significant body of research has devoted considerable attention to uncovering the myriad influences that shape ESG, with board room structure, in particular, board gender diversity (BGD), emerging as a key determinant (Nadeem et al., 2019; Rao and Tilt, 2016; Yarram and Adapa, 2021; Cambrea et al., 2023). However, research exploring the nexus between BGD and ESG/CSR presents a complex and somewhat paradoxical picture. Research originating from developed economies predominantly supports a positive relation between BGD and ESG (Nerantzidis et al., 2022; Wasiuzzaman and Subramaniam, 2023; Yarram and Adapa, 2021; Jizi, 2017). In stark contrast, studies set within

developing economies present a more fragmented and inconsistent picture. While some research suggests a positive relation (Wasiuzzaman and Subramaniam, 2023; Al-Mamun and Seamer, 2021; Katmon et al., 2019), others report a negative or statistically insignificant relationship (Gallego-Álvarez and Pucheta-Martínez, 2020; Hussain et al., 2018; Zaid et al., 2020; Yadav and Prashar, 2022). This apparent contradiction signals an exigent need for a deeper investigation into the dynamics of BGD and ESG. Thus, our research aims to reconceptualize the relationship between BGD and ESG, placing this examination within the unique socio-cultural context of South Africa—an environment hitherto underexplored in this scholarly discourse.

Extant literature primarily attributes the positive influence of female directors on ESG to their distinct interpersonal traits and social orientation, factors that set them apart from their male counterparts (Marano et al., 2022; Cordeiro et al., 2020). Nevertheless, this premise may not fully encapsulate the intricate realities of board decision-making.

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Female directors' contributions are often hindered by sociocultural and structural impediments, including but not limited to gender-based biases and stereotyping (Nielsen and Huse, 2010). These biases can potentially undermine the influence of women on environmental performance (Galbreath, 2011), a key facet of ESG. In developing economies, the lower societal status accorded to women and prevailing gender discrimination may further erode their impact on ESG and sustainable performance (Husted and Sousa-Filho, 2019; Zaid et al., 2020). The Role Congruity Theory of Prejudice Toward Female Leaders (Eagly and Karau, 2002) posits that prejudice against women in leadership stems from stereotypical notions that leadership roles, traditionally associated with men, are ill-suited for women. This stereotype extends beyond the "glass cliff" phenomenon (Ryan and Haslam, 2007), manifesting in challenges such as shorter board tenures for women directors (Glass and Cook, 2016; Groysberg & Bell, 2013) and negative stock market reactions to their appointments (Gupta et al., 2018; Lee and James, 2007; Mitra et al., 2021). Such prejudices contribute to stereotype threats (Hoyt and Murphy, 2016), which can significantly influence the decision-making preferences of female directors (Carr and Steele, 2010).

In response to the widespread negative stereotypes and biases confronting female directors, particularly in developing economies, it is plausible that these leaders adapt their strategic decision-making tendencies. Goyal et al. (2023) suggest that gender discrimination is particularly endemic in contexts where women are grossly underrepresented in the workforce, compelling them to devise resilient strategies to counter these stereotypes. Hence, we postulate that in developing economies, women serving on boards of directors strive to debunk these stereotypes to gain the confidence to share their views and gain the legitimacy of shareholders and fellow board members. Consequently, they might lean towards short-term decisions, which yield immediate outcomes and thus illustrate their efficacy (Venkatraman, 1989; Zheng et al., 2019). Additionally, to gain approval from their peers on the board, they might distance themselves from decisions perceived as reflecting gendered perspectives (Markóczy et al., 2021). Thus, it is conceivable that female directors could exert a negative influence on ESG, a relationship that could be mediated by a short-term orientation.

Building on the argument by Goyal et al. (2023) that coping strategies employed against gender bias could vary with the length of a woman director's tenure on the board and drawing from the proposition by Sun and Bhuiyan (2020) that directors' decisions evolve with their tenure, we propose that the tenure of female directors could conditionally impact how BGD influences short-term orientation. As women directors accrue tenure on the board, they confront fewer prejudices, and concerns over legitimacy and career advancement lessen. Consequently, their focus may shift from achieving short-term outcomes to addressing issues aligned with more feminine perspectives, such as social and environmental decisions. Female directors are often distinguished from their male counterparts by traits such as sympathy, spontaneity, affection, kindness, interpersonal sensitivity, altruism, and a greater orientation towards societal concerns (Boulouta, 2013; Zaid et al., 2020). Moreover, they tend to be more philanthropically driven, in contrast to male directors, who typically exhibit a stronger economic orientation (Ibrahim and Angelidis, 1994). This shift is conceivable, as extended board tenure reduces ignorance of directors' opinions, builds legitimacy, and empowers them to advocate their perspectives and values (Dou et al., 2015; Saeed et al., 2022).

However, the unique context of family businesses might yield different outcomes for female directors. Such firms typically exhibit a higher representation of women compared to other firms (Wilson et al., 2013), and their appointment to board positions is often grounded in family affiliations and ties (Bettinelli et al., 2019). Moreover, family firms are argued to provide a more supportive environment for female directors in leadership roles, facilitating the effective execution of their responsibilities (Nekhili et al., 2018). These factors imply that the climate within family businesses is more amenable to female directors, enabling their substantial contributions to board dynamics. As such,

negative gender-based stereotypes are less likely to appear in such environments, consequently influencing business outcomes. We, therefore, introduce family firms as a potential moderating factor in the relationship between BGD and short-term orientation, keeping in line with the proposition that female directors' behavior aligns with the long-term orientation inherent to family firms' culture.

The cultural context of South Africa is deeply rooted in traditions, conventions, and beliefs that perpetuate women's subordinate status and emphasize male dominance (Wadesango et al., 2011), adding complexity to the social landscape. The legacy of apartheid, South Africa's history of legal discrimination, has produced homogenous boards of directors and exacerbated gender discrimination (Gyapong et al., 2016; Mathur-Helm, 2005; Nel et al., 2022). While there are no legislated mandates for board gender diversity in the country, the King IV Code does encourage companies to voluntarily aim for diversity in terms of gender and race and to report on their progress in annual reports. Furthermore, the 2017 revisions to the Johannesburg Stock Exchange (JSE) listing requirements prompted firms to implement policies for gender diversity on their boards, though they did not establish a specific ratio requirement (Buerter, 2021; Mans-Kemp and Viviers, 2019). Despite these governmental efforts to alleviate gender-based discrimination, the enduring nature of negative stereotypes about women in the cultural consciousness of South Africa poses significant obstacles. Research continues to reveal enduring gender disparities in labor market participation and wage rates, especially in male-dominated sectors (Mosomi, 2019). This distinctive socio-cultural milieu of South Africa provides a compelling backdrop for investigating the propositions of our study.

Our dataset comprises firms listed on the Johannesburg Stock Exchange (JSE) from 2015 to 2020, and our results largely support the proposed hypotheses. The choice of 2015 as the starting year is twofold: first, the availability of ESG scores in the Refinitiv Eikon database is restricted prior to 2015; second, the period preceding 2015 was marked by several governance reforms related to integrated reporting. Notably, the King III Report of 2009 advocated for firms to issue integrated reports annually. In accordance with this recommendation, the JSE required listed firms to publish integrated reports for the financial year starting in March 2010 (Steyn, 2014). Moreover, on March 18, 2014, the Integrated Report Council of South Africa adopted the International Integrated Report Council's (IIRC) framework, potentially influencing the substance of integrated reports (Steyn, 2014).

Our research contributes to the literature in several ways. **First**, previous research has predominantly concentrated on the importance of female directors in corporations concerning social decision-making. However, these studies have often neglected the specific challenges and stereotypes that women face, which may attenuate their influence on the board, especially in relation to social and environmental issues. Thus, our study moves beyond the predominant focus on the direct relationship between board gender diversity and ESG to explore the strategic use of a short-term orientation by female directors as a resilience strategy against negative stereotypes about their efficacy. This orientation, in turn, influences their ESG decision-making. By incorporating temporal orientation as a mediating variable between BGD and ESG, our research helps resolve contradictory findings in the extant literature and enhances our understanding of the mechanisms employed by female directors in developing economies to influence ESG decisions. **Second**, while the current literature acknowledges that directors' decision-making evolves with tenure, there is a notable gap in understanding how the preferences of female directors vary in response to the challenges they encounter on the board. Our research addresses this gap by demonstrating that as female directors accumulate tenure, they gain legitimacy, mitigate career-related concerns, and reduce the pressures associated with short-term decision-making. **Finally**, our research offers additional evidence on how female directors in family firms tailor their decision-making to align with the culture of these firms, diminishing the importance of short-term orientation within the context of family firms.

In this way, our study enriches the academic dialogue on board gender diversity, temporal orientation, and their interplay within different organizational contexts, particularly in the developing world.

## 2. Theory and hypotheses development

While a significant body of research argues that female directors can contribute to firms by providing diverse perspectives, particularly on social issues (Campopiano et al., 2022), it has been established that this role is largely contingent on the national context (Byron and Post, 2016). Specifically, in developed nations, female directors can positively influence ESG. In contrast, in developing nations, their legitimacy is often perceived as more questionable (Post and Byron, 2015; Wasiuzzaman and Subramaniam, 2023). Women in developing nations are significantly underrepresented on corporate boards, leading to a higher likelihood of encountering gender-based discrimination and restrictions in decision-making (Husted and Sousa-Filho, 2019; Zaid et al., 2020). Multiple contextual factors, such as institutional frameworks, socio-cultural environments, and internal gender stereotype biases, influence the contribution of female directors in board decision-making processes (Cassell, 1997; Gangadharan et al., 2016; Nielsen and Huse, 2010; Sarkar and Selarka, 2021).

The role congruity theory of prejudice toward female leaders, proposed by Eagly and Karau (2002), offers a compelling explanation for the bias encountered by women directors. This theory posits that the prejudice against women on boards emanates from the stereotype that leadership roles, traditionally filled by men, are unsuitable for women. Men are often associated with traits like assertiveness, independence, aggression, and decisiveness, while women are perceived as exhibiting sympathy, helpfulness, kindness, and concern for others (Heilman, 2001). Such biases can undermine the effectiveness of female directors, diminish their status on boards (Wang et al., 2021a,b), and increase stereotype threats (Hoyt and Murphy, 2016).

Carr and Steele (2010) have examined the influence of stereotypes on individual performance and decision-making preferences. Pronin et al. (2004) found that when confronted with stereotype threats, women may distance themselves from characteristics closely aligned with these stereotypes. This disavowal is particularly evident in women who succeed in male-dominated fields, countering any gender-based doubts about their capabilities (Heilman, 2001). Furthermore, individuals may adopt counter-stereotypical behavior as a strategy to diminish the personal impact of stereotypes (Hoyt and Murphy, 2016).

In line with Sidhu et al. (2021), who underscored the importance of acknowledging social biases in research on board gender diversity, our study considers the reduced status of female directors in developing markets, exacerbated by deep-seated stereotypes and gender biases. Our arguments are thus grounded in the role congruity theory of prejudice toward female leaders, providing the theoretical basis for our investigation.

### 2.1. Board gender diversity and ESG

Board gender diversity has emerged as an essential governance tool that has drawn considerable attention from directors, shareholders, and researchers in modern business (Carter et al., 2003; Boulhaga et al., 2023; Bufarwa et al., 2020; Elmagrhi et al., 2019; Frijat et al., 2023; Kazemi et al., 2023; Khatib et al., 2021; Mahran and Elamer, 2023; Zaid et al., 2020). A majority of studies harness resource-based theory and feminist characteristics to underscore the value female directors bring to board decisions (Abdelfattah et al., 2021; Abdou et al., 2021; Alnabsha et al., 2018; Alshbili et al., 2019; Alshbili and Elamer, 2020; Amin et al., 2023). Specifically, the presence of female directors is suggested to enhance decision-making quality by introducing diverse perspectives (McLaughlin et al., 2021; Owusu et al., 2020; Roberts et al., 2021; Ruigrok et al., 2007; Srouji et al., 2023; Ullah et al., 2023), particularly those related to social issues (Boulhaga, 2013). However, both anecdotal

and empirical evidence suggests that the benefits of female directors are primarily realized in developed countries where gender parity is more prevalent. For instance, a comparative study between developed and developing countries demonstrated that female directors significantly increase ESG in developed countries, while the same is not valid for developing countries (Wasiuzzaman and Subramaniam, 2023). This observation renders the role of female directors toward ESG in developing countries questionable. Factors contributing to this limited impact on ESG include inadequate representation of women on boards, gender discrimination, and pervasive negative gender stereotypes in developing countries (Husted and Sousa-Filho, 2019; Zaid et al., 2020). Yarram and Adapa (2021) contend that having just one female director on a board may not significantly affect corporate social responsibility (CSR) due to perceptions of tokenism.

In the face of limited female director representation, women are more likely to encounter discrimination (Goyal et al., 2023) and stereotype threats (Hoyt and Murphy, 2016). According to the role congruity theory of prejudice toward female leaders (Eagly and Karau, 2002), prejudice against women on boards primarily stems from the stereotype that leadership roles, typically associated with men, are not a good fit for women. Multiple studies have evidence that prejudice and lower status of female directors influence their participation in board dynamics, with manifestations including limited engagement in board tasks (Weck et al., 2022), negative influence on strategic change (Sidhu et al., 2021), restricted participation in decision-making and strategic involvement (Nielsen and Huse, 2010), and downplaying their input on environmental quality (Galbreath, 2011).

To counteract the prejudice and threat of negative stereotypes and to elevate their board status, Markóczy et al. (2021) suggested that female directors are more likely to de-emphasize gender perspectives. They argue that female directors, in order to garner support from the majority, need to underscore commonalities and downplay demographic distinctions that are devalued. Since people can reduce the personal relevance of stereotypes by engaging in “counter-stereotypical behavior” (Hoyt and Murphy, 2016), female directors might prioritize decisions that reduce their gender’s salience, thus postponing ESG decisions. This is because female directors differ from their male counterparts in that they are sympathetic, spontaneous, affectionate, kind, interpersonally sensitive, altruistic, and more societally oriented (Boulhaga, 2013; Heilman, 2001; Zaid et al., 2020). Additionally, they are more philanthropically driven compared to male directors who are economically oriented (Ibrahim and Angelidis, 1994).

Empirical studies, predominantly in developed countries, have generally identified a positive relation between board gender diversity (BGD) and environmental, social, and governance (ESG) performance (Nerantzidis et al., 2022; Wasiuzzaman and Subramaniam, 2023; Yarram and Adapa, 2021; Jizi, 2017). In contrast, the influence of female directors on ESG appears to be more constrained in developing countries, as evidenced by several studies. Zaid et al. (2020), for instance, observed that in the Palestinian context, female directors were unable to impact sustainable performance. Husted and Sousa-Filho (2019) found that women’s presence on boards negatively affects ESG in Latin American countries. Similarly, Gallego-Álvarez and Pucheta-Martínez (2020) reported a negative relationship between BGD and corporate social responsibility (CSR) in a sample from 10 developing countries, a trend they attribute to perceptions of tokenism and the associated stereotypes and biases.

Given the discussion above, due to their lower status in developing countries, female directors are less likely to integrate gender-related perspectives (e.g., ESG) into boardroom discussions in order to encounter negative stereotypes and gain legitimacy and support from majority directors. Consequently, we propose the first hypothesis as follows.

**H1.** Board gender diversity negatively influences ESG.

## 2.2. The mediating role of short-term orientation

Firms' temporal orientation reflects how investments with different cost and benefit distributions over time are weighted strategically (Souder and Shaver, 2010). It can range from short-term to long-term (Zheng et al., 2019). While the long-term orientation reflects the decision makers' subjective preferences for the future, the short-term orientation reflects their focus on the present (Lin et al., 2018). The pressure for short-termism, such as career concerns and stock market pressures, invokes decision-makers to take decisions that benefit the company in the near term at the expense of its long-term decisions (Flammer and Bansal, 2017).

As we previously discussed, female directors encounter different experiences and greater challenges at work compared to their male counterparts (Gupta et al., 2018). Socio-cultural values and discrimination can inhibit a woman's career progression (Yarram and Adapa, 2021). Evidence suggests that female directors tend to have shorter tenures on boards compared to their male counterparts (Groysberg and D, 2013; Kesner, 1988; Main and Gregory-Smith, 2018). Consequently, their board representation may be merely symbolic, disregarding their potential contributions. This precarious position can increase their career and legitimacy concerns, pressuring them to focus on short-term outcomes to showcase their skills and efficiency.

Furthermore, most prior research investigating the stock market's reaction to female director appointments found a negative relationship, indicating shareholders lack confidence in female directors' ability to maximize shareholder wealth, thus questioning their legitimacy. Lee and James (2007) revealed a more negative shareholder response to announcements of female CEOs compared to males. Similarly, Gupta et al. (2018) found that the response of activist shareholders to the appointment of women in CEO positions is more negative than to appointing male CEOs. These adverse reactions are mainly rooted in studies examining the short-term market reaction to female director appointments, suggesting that these negative stereotypes are temporary (Loy and Rupertus, 2022). As previously discussed, the underlying cause of the prejudices and negative stereotypes lies in the belief that leadership roles are ill-suited for women, prompting female directors to make decisions that counteract these stereotypes. Individuals may engage in "counter-stereotypical behavior" to diminish the personal impact of such stereotypes (Hoyt and Murphy, 2016).

Given that individual decisions can be influenced by prejudice and stereotypes (Carr and Steele, 2010), it is posited that female directors, upon their appointment, are motivated to disprove these negative stereotypes. In doing so, they aim to establish their legitimacy among shareholders by demonstrating their effectiveness and efficiency. Thereby, they may focus on short-term decisions that highlight efficiency (Natarajan, 1989; Zheng et al., 2019) and yield immediate results. Qian et al. (2023) supported this reasoning, as negative market reactions exert additional pressure on female directors, causing them to prioritize short-term decisions over the interests of other stakeholders. (Campbell and Marino, 1994; Narayanan, 1985) also support the argument of using short-term orientation to signal the efficiency and reputation of decision makers. According to the "strategic reference point theory," a decision maker's preference for a reference point can influence firms' strategic actions (Dou et al., 2019; Fiegenbaum et al., 1996). Based on this and the aforementioned arguments, it is plausible that female directors might influence the firm's short-term orientation to counter negative stereotypes, signal their ability and efficiency, and gain legitimacy from shareholders and board members. This in turn could lead to a reduction in long-term investments like ESG. We thus propose short-term orientation as a mediator between BGD and ESG, as ESG tends to align more with firms prioritizing long-term orientation rather than short-term orientation (Choi et al., 2023; Graafland and Noorderhaven, 2020).

The empirical evidence suggests that the composition of a company's board can significantly influence its temporal orientation. Zheng et al.

(2019) found that CEOs who have self-interest values tend to steer their companies away from long-term orientations. Similarly, Galbreath (2017) observed that insider directors are more prone to short-term thinking compared to their counterparts. The literature also supports the notion that a firm's temporal orientation can affect its engagement with environmental, social, and governance (ESG) issues. For instance, Choi et al. (2023) reported that firms with a long-term orientation are more inclined to invest in ESG initiatives. Following the above arguments, we propose our second hypothesis as follows.

**H2.** The firm's short-term orientation (SHRT) mediates the relationship between BGD and ESG.

## 2.3. The moderating role of female directors' tenure

In recent years, directors' tenure has garnered attention from researchers and regulators as a crucial governance mechanism (Elms and Pugliese, 2023; Patro et al., 2018). This is because a director's value is often determined by the length of their service on the board. Sun and Bhuiyan (2020) suggested that the decisions and contributions of directors vary over their tenure. On one hand, newly appointed directors may not contribute significantly to board dynamics until they become acclimated to their roles (Elms and Pugliese, 2023), often due to a lack of intimate knowledge of the company's operations (Veltrop et al., 2018). On the other hand, directors with extended board tenures can effectively participate in strategic decisions thanks to their accrued business knowledge and experience (Bonini et al., 2017; Joubert, 2020; Reguera-Alvarado and Bravo, 2017).

Furthermore, the longer female directors serve on the board, the less likely their values and opinions are to be ignored by other board members (Saeed et al., 2022). This is because their tenure helps them establish legitimacy, allowing them to share their values and perspectives in strategic decision-making (Dou et al., 2015). Not only do they gain legitimacy from their peers on the board, but also from shareholders, as their long tenure reflects shareholder satisfaction with the directors' appointments and contributions (Brown et al., 2017; Livnat et al., 2021). As a result, the legitimacy and career concerns that female directors face diminish as their tenure increases. This is because their tenure signals their reputation and experience (de Villiers et al., 2011), which in turn mitigates the negative stereotypes against women on the board and reduces the pressures for short-termism. Additionally, as gender stereotypes decrease with the increased tenure of female directors, these directors are more likely to incorporate decisions related to their gender, such as ESG.

Empirical research substantiates the positive impact of directors' extended tenure on various firm outcomes. Tran Phuong et al. (2022) demonstrated that longer directors' tenures can enhance the relationship between tenure diversity and investment efficiency. Similarly, Gull et al. (2018) posited that the business experience of female directors, as indicated by their tenure, can improve the effectiveness of earnings management oversight. Moreover, Katmon et al. (2019) reported that increased directors' tenure is associated with improved corporate social responsibility (CSR) performance. Based on the above arguments, we argue that the longer tenure of female directors mitigates the negative stereotypes against women on the board and reduces the pressures for short-termism. Additionally, as gender stereotypes decrease with the increased tenure of female directors, these directors are more likely to incorporate decisions related to their gender, such as ESG. We therefore propose the third hypothesis as follows.

**H3.** The tenure of female directors negatively moderates the relationship between BGD and SHRT.

## 2.4. The moderating role of family firms

Family firms differ from non-family firms in many aspects, including temporal orientation and the appointment of women on boards. Family

firms are noted to take a longer view, considering the long-term consequences of current actions (Dou et al., 2019). As such, they are more long-term oriented than their non-family counterparts (Lumpkin and Brigham, 2011; Zahra et al., 2004). This long-term perspective often stems from the belief of family owners that their ownership will pass on to future generations, encouraging a multigenerational viewpoint (Anderson and Reeb, 2003; Tseng, 2020). This drives family firms to maintain their societal reputation (Lumpkin and Brigham, 2011). Therefore, when making decisions, family firms tend to prioritize socioemotional wealth as the main strategic reference point (Gómez-Mejía et al., 2007). Berrone et al. (2010) argued that family-controlled firms protect their socioemotional wealth through superior environmental performance. Many studies corroborate this claim, documenting the enhanced commitment of family firms towards social responsibility (Cordeiro et al., 2018; Lamb and Butler, 2016; López-González et al., 2019; Sahasranamam et al., 2020) to ensure firm survival. As a result, family firms tend to be more socially oriented than non-family firms (García-Sánchez et al., 2021).

Cordeiro et al. (2020) further argued that family shareholders often exert influence over their businesses by appointing board members who align with their values to enhance environmental CSR, identifying female directors as particularly suited for this role. This might explain the higher gender diversity in family firms compared to non-family firms (Wilson et al., 2013) and the greater number of female CEOs (Jorissen et al., 2005). The appointment of female directors in family firms is often based on familial affiliations and connections (Abdullah, 2014; Bettinelli et al., 2019; Campbell and Mínguez-Vera, 2008; Seckin-Halac et al., 2021). As a result, these directors are likely to make decisions that align with the long-term preferences of the family (Thomsen and Pedersen, 2000; Nadeem et al., 2019), especially those that bolster the business's long-term reputation (Miller and Le Breton-Miller, 2006), such as ESG. Wilson et al. (2013) affirmed this argument, finding that female directors help family firms survive longer by reducing bankruptcy risk. Cordeiro et al. (2020) supported this logic, asserting that a higher presence of women on family firms' boards is likely to increase decisions that prioritize family preferences, especially when these priorities coincide with women's orientation towards environmental issues.

Empirical studies have found that family firms can positively influence the relationship between board gender diversity (BGD) and environmental, social, and governance (ESG) performance (Cordeiro et al., 2020; Gavana et al., 2023). Building on these findings, we hypothesize that negative stereotypes towards female directors may be less pronounced in family firms. Consequently, female directors in family firms are more likely to make decisions that are congruent with the family's long-term orientation and may be more inclined to incorporate considerations related to gender, such as ESG concerns, into their decision-making process. This is because these decisions align with the family's desire to uphold their societal reputation and are therefore less likely to be overlooked in the family firm context. As such, we predict that the positive relationship between BGD and short-term orientation (SHRT) is less likely to be significant within the context of family firms. The above discussion leads us to our fourth hypothesis.

**H4.** The relationship between BGD and SHRT is negatively moderated by the presence of family firms.

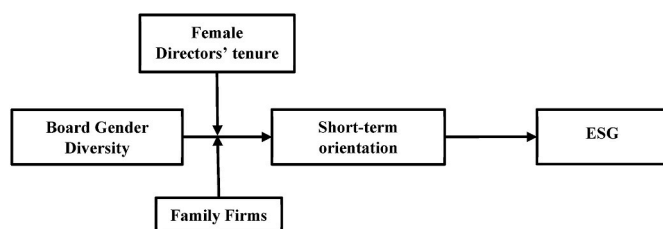


Fig. 1. The proposed model for the study.

The proposed research model is illustrated in Fig. 1.

### 3. Method

#### 3.1. Sample and data collection

To construct our sample, we started with 301 firms listed on the Johannesburg Stock Exchange (JSE) from 2015 to 2020. We excluded 75 financial sector firms due to their distinctive accounting rules and the extensive regulations that impact their corporate governance and performance (Ntim and Soobaroyen, 2013). Of the remaining non-financial firms, only 84 had ESG scores available for the period of interest. We excluded 7 firms because they were not included in the Compustat database. As integrated reports are crucial for measuring the mediator variable (SHRT), we further excluded 5 firms for lacking these reports. Consequently, our final sample comprised 72 firms from five industries: basic materials, consumer services, consumer goods, technology, and industrials. This resulted in 432 firm-year observations and represents over 80 percent of the market capitalization of non-financial firms on the JSE.

Data for the study were sourced from various databases and reports. ESG scores were obtained from the Refinitiv Eikon database, while financial data were sourced from the Compustat database. Information on female directors, their tenure, board size, board independence, family firm status, meeting frequency, and short-term orientation was manually gathered from the integrated reports of the firms.

#### 3.2. Variables measurements

##### 3.2.1. The dependent variable: ESG

We measured Environmental, Social, and Governance using the ESG score obtained from the Refinitiv Eikon database. The ESG score, which incorporates evaluations of a company's environmental, social, and governance performance, has been widely employed in previous studies. Refinitiv Eikon's database assigns environmental scores based on 68 indicators, social scores based on 62 indicators, and governance scores based on 56 indicators, resulting in a total ESG score that ranges from 0 to 100 percent (Refinitiv Eikon DataStream, 2022). ESG scores generated by the Refinitiv Eikon database are among the most reputable and reliable databases for ESG scores (Bätae et al., 2021; Shakil, 2021; Yarram and Adapa, 2021). As board gender diversity is a component of the governance (G) score, we excluded the governance score when measuring the dependent variable. Consequently, our dependent variable,  $ESG_1$  is measured by combining the environmental (E) and social (S) scores and dividing the total by 100.

##### 3.2.2. The independent variable: board gender diversity (BGD)

Consistent with previous research, we measure board gender diversity (BGD) as the ratio of female directors on the board (Beji et al., 2021; Bruna et al., 2021; Harjoto and Rossi, 2019; Zaid et al., 2020).

##### 3.2.3. The mediator variable: short-term orientation (SHRT)

Drawing on the methodology used by Flammer and Bansal (2017), we employed a content analysis technique to measure short-term orientation (SHRT). This approach involves counting the instances of keywords related to short-term orientation (e.g., "short run," "short-run," "short term," "short-term") and long-term orientation (e.g., "long run," "long-run," "long term," "long-term") within corporate communications. The SHRT index was then constructed by calculating the percentage of total short-term keywords relative to the sum of both short- and long-term keywords. As Flammer et al. (2019) note, companies that use long-term keywords more frequently are likely to exhibit a stronger

<sup>1</sup> We test our hypothesis using the ESG score and find support for it; however, we only provide the results of using the ES score to avoid the endogeneity issue.

long-term orientation.

To produce the *SHRT* index, we used NVivo software to analyze the integrated reports of the firms in our sample. To validate this approach, we manually counted the relevant keywords in 20 randomly selected reports and compared these findings with the NVivo results. The two sets of findings were found to be identical.

### 3.2.4. The moderator variables

**Female Directors' Tenure (FTenure):** This variable is calculated as the average length of time that female directors have served on the board. The tenure of each female director is determined by subtracting the date of their appointment from the current observation date. The average of all female directors' tenures is then calculated to provide a single measure.

**Family Firms (F.NF):** Following previous studies, we defined family firms using a dummy variable. A firm is classified as a family firm (coded as 1) if one or more family members own at least 10 percent of the firm's shares and at least one family member is represented on the board. All other firms are coded as 0 (Chen and Jaggi, 2000; Nekhili et al., 2018; Rodríguez-Ariza et al., 2017).

### 3.2.5. Control variables

To construct a robust model, we followed prior studies (Al-Mamun and Seamer, 2021; Beji et al., 2021; Bose et al., 2022; Hussain et al., 2018; Husted and Sousa-Filho, 2019; Katmon et al., 2019; Yarram and Adapa, 2021; Zaid et al., 2020) to control for firm and board characteristics that have been demonstrated to affect ESG performance, thereby mitigating potential biases. Firm age (*Fage*) is included due to the tendency of older firms, with heightened reputation concerns, to engage more in sustainability activities. *Fage* is measured by taking the natural logarithm (ln) of the number of years since the firm's establishment (Zaid et al., 2020). Financial performance is captured through return on assets (*ROA*), calculated by dividing earnings before interest and tax by total assets, reflecting the resources available for social and environmental contributions. Firm size (*Size*) is considered based on the observation that larger firms, which face greater scrutiny from the media, may be pressured into socially responsible behavior (Fombrun and Shanley, 1990). *Size* is measured by the natural logarithm (ln) of the firm's total assets. Leverage (*LEV*), indicative of risk levels, is included with the expectation that higher leverage may incentivize firms to improve their ESG scores as a risk attenuation strategy. It is calculated as the ratio of total debt to total assets (Zaid et al., 2020). Board meetings (*MET*) are factored in, with the frequency of meetings potentially increasing the discussion and focus on ESG issues within the board (Al-Mamun and Seamer, 2021). *MET* is quantified as the total number of meetings held annually. Board independence (*IND*) is expected to bolster ESG, as independent directors typically possess a broader range of networks and knowledge pertaining to ESG compared to insider directors (Endrikat et al., 2020). *IND* is the ratio of independent directors to the total number of board members (Husted and Sousa-Filho, 2019). Board size (*BSIZE*) is also considered, with the premise that a larger board may bring diverse perspectives on social and environmental issues to the decision-making process (Husted and Sousa-Filho, 2019). *BSIZE* is the total number of board members of the firm. For Female CEO (*FCEO*), we employed a dummy variable that equals 1 if the firm's CEO is a woman and 0 otherwise, based on studies suggesting that female CEOs may exhibit a stronger ethical orientation and thus a greater focus on social issues (Bose et al., 2022).

### 3.3. Model specification

Our analysis is based on panel data. Prior studies have highlighted the inherent endogeneity problem in the relationship between BGD and ESG/CSR (Beji et al., 2021; Boulouta, 2013; Francoeur et al., 2019). This endogeneity bias may lead to an inaccurate estimation of the coefficients (Ketokivi and McIntosh, 2017). Therefore, we used the two-step

Generalized Method of Moments (GMM) to conduct our main analysis. This method allows us to mitigate potential endogeneity caused by omitted variables, simultaneity, and reverse causality. Developed by Arellano and Bond (1991), the GMM controls for endogeneity in dynamic panel data by using lags of dependent variables as instruments. In our study, one lag of the ESG score was used as an instrumental variable.

## 4. Results

### 4.1. Descriptive statistics

As depicted in Table 1, the ESG scores of the firms studied here vary considerably, with the lowest score at 0.0911 and the highest at 0.910. This variation indicates a lack of uniformity in the level of engagement in ESG activities among the firms. The average ESG score stands at 0.498, which, when compared with ESG score averages in developed nations (e.g., a mean score of 61 percent reported by (Batae et al., 2021), is notably lower. On a more encouraging note, our data shows that board gender diversity (BGD) has seen a positive trend. The average BGD score is 25.6 percent, signifying that approximately a quarter of board seats are held by female directors. This figure represents an increase from previous years in South Africa, where studies reported BGD scores of 11.76 percent (Ntim and Soobaroyen, 2013) and 16.75 percent (Gyapong et al., 2016). Nevertheless, despite the improvement, the current BGD score in South Africa remains lower than in more developed nations. The average tenure of female directors (FTenure), however, is a matter of concern. With an average of 4.8 years, it is significantly less than the female director tenure in developed countries, such as France, which reports an average of 6.5 years (Gull et al., 2018). Moreover, compared to the tenure of their male counterparts, female directors' tenure is much shorter. A study by Patro et al. (2018) indicates an average board member tenure of 9.9 years, nearly double that of female directors. This broad range in tenure - with a minimum of zero years and a maximum of 16 years - allows for a robust exploration of how BGD influences SHRT at various tenure lengths. The average of family firms is 0.11, denoting that 11 percent of our sample firms are owned by families.

To ensure the validity of our regression model, we used the variance inflation factor (VIF) to check for multicollinearity. A VIF value below 10 is a good indicator that multicollinearity is not problematic. As shown in Table 2, our VIF values range from 1.04 to 1.26, providing confidence that multicollinearity does not pose a challenge to our analysis.

### 4.2. Multivariate regression analysis

In evaluating the accuracy of our coefficient estimations, we performed three diagnostic tests. The Arellano and Bond tests (AR1 and AR2) were applied to check for serial correlation in the first-differenced

**Table 1**  
Descriptive statistics.

Variable	Observation	Mean	Median	Standard deviation	Min.	Max.
ESG	432	0.498	0.497	0.178	0.091	0.910
BGD	432	0.256	0.250	0.121	0.000	0.667
SHRT	432	0.320	0.320	0.111	0.031	0.592
FTenure	432	4.810	4.500	2.930	0.000	16.00
F.NF	432	0.110	0.000	0.314	0.000	1.000
SIZE	432	23.60	23.50	1.120	20.40	26.80
ROA	432	0.067	0.060	0.118	-0.522	0.499
LEV	432	0.223	0.218	0.143	0.001	0.761
FAGE	432	3.790	3.910	0.822	0.000	5.130
BSIZE	432	11.20	11.00	2.610	5.000	20.00
IND	432	0.723	0.750	0.105	0.167	0.917
MET	432	4.932	5.000	1.316	2.000	10.00
FCEO	432	0.021	0.000	0.143	0.000	1.000

**Table 2**  
Correlation matrix.

Variables	VIF.	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) ESG		1.000												
(2) BGD	1.23	0.068	1.000											
(3) SHRT	1.11	-0.193***	0.016	1.000										
(4) F.NF	1.10	-0.281***	-0.215***	0.131***	1.000									
(5) FTenure	1.12	-0.068	-0.210***	-0.007	0.018	1.000								
(6) SIZE	1.26	0.324***	-0.018	-0.173***	-0.065	0.002	1.000							
(7) ROA	1.09	-0.007	-0.102**	0.033	0.008	0.121**	0.008	1.000						
(8) LEV	1.06	-0.025	0.025	-0.025	0.022	0.096**	0.069	-0.159***	1.000					
(9) FAGE	1.08	0.040	0.034	0.232***	-0.040	0.037	-0.116**	-0.024	-0.024	1.000				
(10) Bsize	1.22	0.241***	0.022	-0.042	-0.117**	-0.057	0.354***	0.005	-0.004	-0.056	1.000			
(11) IND	1.18	0.176***	0.013	-0.072	-0.110**	-0.146***	0.255***	-0.033	0.009	-0.102**	0.295***	1.000		
(12) MET	1.04	0.149***	-0.064	-0.040	-0.003	-0.064	0.088*	0.122**	0.012	-0.040	-0.031	0.020	1.000	
(13) FCEO	1.17	-0.066	0.297	0.002	-0.052	-0.018	-0.166***	-0.103**	-0.084*	0.000	-0.074	-0.134***	-0.042	1.000

Notes: \*, \*\*, and \*\*\* refer to the significance of correlation is at 0.10, 0.05, and 0.01 levels, respectively.

residuals. As per Manuel and Bond (1991) and Richard and Bond (1998), the AR1 test (which should be significant) demonstrates values less than 0.05 across all GMM models. The AR2 test (which should not be significant) exceeds 0.05, confirming the absence of autocorrelation in the second equation of the GMM models within this study. Additionally, the Hansen test was employed to verify the validity of the instruments used in the system GMM model. Across all GMM models, the Hansen test reveals an insignificant P-value, failing to reject the null hypothesis and confirming the exogeneity of all instruments utilized in the analysis (Roodman, 2009).

We conducted the mediation analysis using the method outlined by Baron and Kenny (1986) by using three regression models as follows:

$$ESG_{it} = \beta_0 + \beta_1 ESG_{it-1} + \beta_2 BGD_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 LEV_{it} + \beta_6 FAGE_{it} + \beta_7 BSIZE_{it} + \beta_8 IND_{it} + \beta_9 MET_{it} + \beta_{10} FCEO_{it} + \sum YEAR\ dummy + \sum INDUSTRY\ dummy + \varepsilon_{it} \tag{1}$$

$$SHRT_{it} = \beta_0 + \beta_1 SHRT_{it-1} + \beta_2 BGD_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 LEV_{it} + \beta_6 FAGE_{it} + \beta_7 BSIZE_{it} + \beta_8 IND_{it} + \beta_9 MET_{it} + \beta_{10} FCEO_{it} + \sum YEAR\ dummy + \varepsilon_{it} \tag{2}$$

$$ESG_{it} = \beta_0 + \beta_1 ESG_{it-1} + \beta_2 BGD_{it} + \beta_3 SHRT_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 FAGE_{it} + \beta_8 BSIZE_{it} + \beta_9 IND_{it} + \beta_{10} MET_{it} + \beta_{11} FCEO_{it} + \sum YEAR\ dummy + \sum INDUSTRY\ dummy + \varepsilon_{it} \tag{3}$$

For the moderation analysis, we employed the following equations:

$$SHRT_{it} = \beta_0 + \beta_1 SHRT_{it-1} + \beta_2 BGD_{it} + \beta_3 (BGD_{it} \times FTENURE_{it}) + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 FAGE_{it} + \beta_8 BSIZE_{it} + \beta_9 IND_{it} + \beta_{10} MET_{it} + \beta_{11} FCEO_{it} + \sum YEAR\ dummy + \varepsilon_{it} \tag{4}$$

$$SHRT_{it} = \beta_0 + \beta_1 SHRT_{it-1} + \beta_2 BGD_{it} + \beta_3 (BGD_{it} \times F.NF_{it}) + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 FAGE_{it} + \beta_8 BSIZE_{it} + \beta_9 IND_{it} + \beta_{10} MET_{it} + \beta_{11} FCEO_{it} + \sum YEAR\ dummy + \sum INDUSTRY\ dummy + \varepsilon_{it} \tag{5}$$

Table 3, Model 1 shows the first condition of Baron and Kenny's approach as in Equ. 1, demonstrating a significant and negative relationship between BGD (independent) and ESG (dependent) ( $\beta = -0.184$ ,  $p < 0.01$ ). Model 2 mirrors the second condition as in Equ. 2, indicating a significant and positive relationship between BGD and SHRT ( $\beta = 0.172$ ,  $p < 0.01$ ). Model 3 reflects the last condition as in Equ. 3, demonstrating a negative and significant direct effect of BGD on ESG in the presence of the mediator (SHRT). This coefficient is lower than the total effect ( $\beta = -0.151$ ,  $p < 0.01$ ). Concurrently, the mediator variable (SHRT) negatively impacts ESG ( $\beta = -0.172$ ,  $p < 0.01$ ), suggesting a partial mediation of SHRT between BGD and ESG (Baron and Kenny, 1986). Beyond these three conditions, we performed the Sobel test to confirm the significance of SHRT's indirect mediating effect between BGD and ESG. The results show that the z-value is -2.38, which is greater than the threshold of the significance value of 1.96 (Preacher et al., 2007), supporting the mediation effect of short-term orientation. These results validate the first two hypotheses of this study, suggesting that temporal orientation is the mechanism through which board gender diversity affects ESG decisions. Our results support the role congruity theory of prejudice toward female leaders. It is noteworthy that, upon joining a board, female directors may confront stereotypes stemming from role incongruity. In response, they may prioritize short-term outcomes to demonstrate their competencies and efficiency, which could lead to a

**Table 3**  
GMM: The mediating effect of short-term between BGD and ESG.

Variables	Model 1-ESG <sub>it</sub>		Model 2-SHRT <sub>it</sub>		Model 3- ESG <sub>it</sub>	
	β	P.value	β	P.value	β	P.value
ESG (t-1)	0.844	0.000***			0.859	0.000***
SHRT (t-1)			0.660	0.000***		
SHRT					-0.172	0.000***
BGD	-0.184	0.002***	0.172	0.002***	-0.151	0.002***
SIZE	0.077	0.000***	-0.002	0.349	0.013	0.007***
ROA	-0.007	0.682	0.006	0.771	-0.004	0.863
LEV	0.002	0.785	0.003	0.225	0.003	0.103
FAGE	0.077	0.033**	0.007	0.066*	0.003	0.646
BSIZE	-0.087	0.000***	0.006	0.001***	-0.001	0.444
IND	0.082	0.235	-0.072	0.190	0.219	0.001***
MET	-0.005	0.001***	0.003	0.050**	-0.003	0.133
FCEO	0.048	0.164	0.061	0.387	-0.030	0.350
Industry dummy	Yes		No		Yes	
Year dummy	Yes		Yes		Yes	
AR (1)	0.001		0.000		0.001	
AR (2)	0.948		0.224		0.908	
Hansen test	0.364		0.245		0.268	
Number of observations	288		288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

decrease in long-term investments, such as those related to environmental, social, and governance (ESG) initiatives, ultimately impacting ESG decisions negatively.

These findings align with those of previous studies by Gallego-Álvarez and Pucheta-Martínez (2020) and Husted and Sousa-Filho (2019), which indicated that female directors have a negative effect on ESG in developing countries. Conversely, our results are at odds with the findings of Al-Mamun and Seamer (2021) and Katmon et al. (2019), who observed a positive relationship between board gender diversity (BGD) and ESG performance.

Table 4 provides the results of the moderating effects of female directors' tenure (FTENURE) and family firms on the relationship between BGD and SHRT. Model 1 demonstrates that FTENURE negatively moderates the relationship between BGD and SHRT (β = -0.0277, p < 0.05), supporting the third hypothesis. These findings support the arguments of Sun and Bhuiyan (2020), who posited that directors' decisions and contributions evolve with their tenure. Our results further confirm that as female directors' tenure on the board lengthens, the influence of

**Table 4**  
GMM: The moderating role of female directors' tenure and Family firms on short term.

Variables	Model 1-SHRT <sub>it</sub>		Model 2-SHRT <sub>it</sub>	
	β	P.value	β	P.value
SHRT (t-1)	0.602	0.000***	0.566	0.000***
BGD	0.149	0.061*	0.179	0.011**
FTENURE	0.003	0.465		
F.NF			0.214	0.005***
BGD* FTENURE	-0.028	0.030**		
BGD* F.NF			-0.634	0.039**
SIZE	-0.002	0.422	-0.014	0.062*
ROA	0.007	0.817	0.020	0.533
LEV	0.008	0.025**	0.004	0.474
FAGE	0.045	0.000**	0.018	0.097*
BSIZE	0.003	0.110	0.006	0.057*
IND	-0.056	0.355	-0.010	0.903
MET	0.003	0.159	0.003	0.087*
FCEO	0.023	0.778	-0.080	0.295
Industry dummy	No		Yes	
Year dummy	Yes		Yes	
AR (1)	0.000		0.000	
AR (2)	0.160		0.152	
Hansen test	0.364		0.331	
Number of observations	288		288	

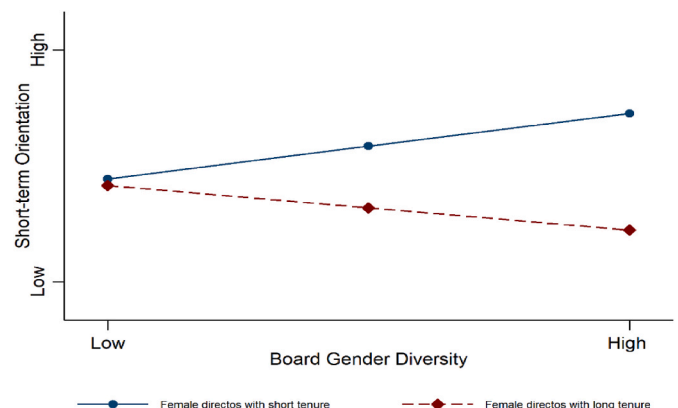
\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

stereotypes decreases, thereby reducing the pressure to focus on short-term outcomes. Prolonged tenure aids female directors in establishing legitimacy, which, in turn, empowers them to infuse their values and perspectives into strategic decision-making processes (Dou et al., 2015). Similarly, Model 2 shows that family firms negatively moderate the relationship between BGD and SHRT (β = -0.6340, p < 0.05), backing the fourth hypothesis. These results suggest that the stereotypes and prejudices typically encountered by female directors are less pronounced within the context of family firms. In such firms, a supportive environment enables female directors to align their decision-making with the family's long-term objectives. This aligns with the findings of Cordeiro et al. (2020) and Gavana et al. (2023), who observed that family firms can positively influence the relationship between board gender diversity (BGD) and ESG, as well as overall environmental performance.

We used the "margins plot" function in STATA14 to illustrate these interaction effects, as depicted in Figs. 2 and 3. Fig. 2 shows that female directors with longer tenure have a negative effect on short-term orientation (SHRT), while those with shorter tenure tend to be more oriented towards short-termism. Fig. 3 suggests that, in contrast to non-family firms, female directors in family firms are less inclined to focus on short-term decisions, as previously discussed.

### 4.3. Additional analysis

To check the robustness of our results, we conducted the following



**Fig. 2.** Interactive effect of female directors' tenure and BGD on SHRT.



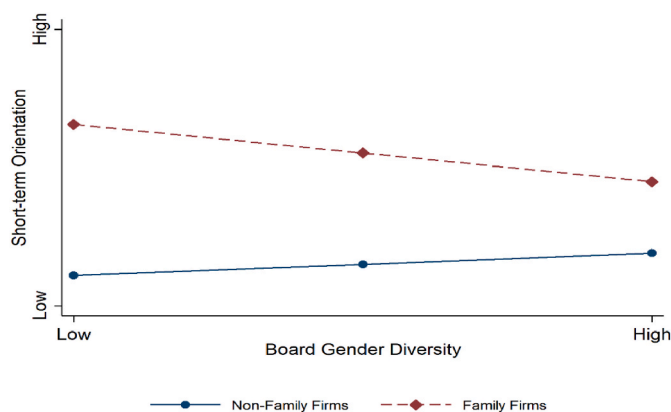


Fig. 3. Interactive effect of Family firms and BGD on SHRT.

analysis: We employed a two-stage least squares (2SLS) regression as an alternative methodological approach. Following the precedents set by Harjoto and Rossi (2019), Wahid (2018), and Wang et al. (2021a,b), we carefully selected valid instruments that are associated with the independent variable—board gender diversity (BGD)—but uncorrelated with the dependent variable. The instruments chosen were the industry average of female directors, the unemployment rate in the province where the firm's headquarters are located, and the percentage of the female population in that province.<sup>2</sup> The 2SLS analysis results, which are detailed in Tables 5 and 6, lend further support to our primary findings.

**Additionally**, we substituted female executive directors (*Fexe*) as the independent variable in place of the entire ratio of female directors. Executive directors, as they are more engaged in resource allocation and more susceptible to pressures for short-termism, might have a more profound impact on temporal orientation and ESG (Galbreath, 2017; Patro et al., 2018). As displayed in Table 7, the results confirm the mediation effect of SHRT between *Fexe* and ESG. Interestingly, the coefficient of female executives on SHRT (0.466) is higher than the coefficient of the entire female representation on board (BGD) on SHRT (0.172), aligning with arguments regarding executives' propensity for short-termism. Table 8 also confirms the moderation effect in the case of *Fexe*.

**Moreover**, we conducted further analysis utilizing the Blau index for heterogeneity as an alternative metric for the independent variable. The findings presented in Tables 9 and 10 support our primary results, demonstrating consistency across different measures of board diversity. **Furthermore**, we conducted further mediation analysis using the environmental and social scores as the dimensions of the dependent variable. The outcomes were largely similar and reaffirmed the mediation analysis, as depicted in Tables 11 and 12. These findings are consistent with Galbreath (2017), reinforcing the robustness of our results.

To ensure that our findings are not merely a reflection of tokenism, we analyzed our primary hypothesis by introducing two dummy variables. The first, Female 1, is assigned a value of 1 if there is a single female director on the board and 0 otherwise; the second, Female 3, is assigned a value of 1 when there are three or more female directors and 0 otherwise. The analysis (unreported) indicates that the presence of a single female director (Female 1) or a 'critical mass' (Female 3) does not significantly influence ESG performance. This supports our contention that the observed outcomes are not attributable to tokenism but rather to the pervasive stereotypes and prejudices against women on boards.

<sup>2</sup> We collected the IV data from the following website: <https://www.statssa.gov.za/>.

## 5. Discussion

In accounting for the social reality that impedes the contributions of female directors, our study argues that the appointment of women to boards often correlates with the prioritization of short-term decisions. This is motivated by a need to counteract negative stereotypes associated with women on boards, which inadvertently affect ESG negatively. We further posit that with increased tenure on boards, women's temporal choices evolve due to diminishing gender stereotypes. Furthermore, due to the alignment between female directors' preferences and family firms' focus on maintaining their social reputation, we argue that the relationship between BGD and SHRT is less likely to be significant in the context of family firms. Our study, using a sample of listed firms on the Johannesburg Stock Exchange in South Africa, finds that BGD negatively affects ESG, a relationship that is mediated by short-term orientation. Moreover, both female directors' tenure and the context of family firms attenuate the negative effect of BGD on SHRT.

### 5.1. Theoretical contribution

This study contributes to the literature on BGD and ESG in several ways. Although many studies have underscored the critical role of female directors in influencing social decisions (Byron and Post, 2016; Nerantzidis et al., 2022; Wasiuzzaman and Subramaniam, 2023; Yarram and Adapa, 2021; Jizi, 2017), some have pointed to a constrained impact, attributing this to the prejudice faced by women on the board (Husted and Sousa-Filho, 2019; Zaid et al., 2020). The literature has not thoroughly explored how gender stereotypes specifically affect the decision-making of female directors, especially regarding issues closely tied to gender traits, such as ESG. Our study addresses this gap by elucidating the social biases that female directors encounter and how these biases amplify stereotype threats. We delve into how these negative stereotypes shape female directors' decision-making, particularly influencing their temporal orientation towards more immediate, short-term decisions as a means of demonstrating their competence and efficiency. In doing so, our study bridges the gap between divergent findings in the body of research on board gender diversity (BGD) and ESG outcomes.

**Moreover**, while prior research indicates that directors' decision-making evolves with their board tenure (Sun and Bhuiyan, 2020), the specific changes in decision-making processes among minority directors, such as women, as their tenure increases remain unclear. Our research underscores the importance of tenure for female directors, suggesting that as they accumulate more time in their roles, the diminishing effects of stereotypes and prejudice allow for a shift in their temporal priorities. Earlier studies highlighted a correlation between shorter board tenures for female directors and their contribution to board decisions (Groysberg and D, 2013; Kesner, 1988; Main and Gregory-Smith, 2018). Our study adds to this body of knowledge by demonstrating that prolonged board tenure for female directors can diminish negative stereotypes, thereby mitigating short-term orientation and positively impacting ESG. In so doing, we respond to the call of Campopiano et al. (2022) to explore the tenure of female directors in their influence on board dynamics. **Furthermore**, due to differing temporal orientations and the appointment of female directors in family firms, our study shows that female directors' decisions align more with the long-term culture of family firms. By incorporating the context of family firms as a moderating variable, we enhance our understanding of the dynamic interplay between board gender diversity, temporal orientation, and ESG in different types of organizations.

### 5.2. Practical implications

Our findings hold significant implications for directors, investors, and regulatory bodies. We found that female directors negatively impact ESG, alerting investors and boards of directors to potential barriers

**Table 5**  
2SLS: The mediating effect of short-term between BGD and ESG.

Variables	Model 1-ESG <sub>t</sub>		Model 2-SHRT <sub>it</sub>		Model 3- ESG <sub>it</sub>	
	β	P.value	β	P.value	β	P.value
SHRT					-0.294	0.000***
BGD	-0.589	0.017**	0.614	0.017**	-0.407	0.513
SIZE	0.039	0.000***	-0.028	0.001***	0.030	0.001***
ROA	0.008	0.959	0.074	0.130	0.141	0.077*
LEV	-0.008	0.196	0.001	0.850	-0.007	0.618
FAGE	0.019	0.000***	0.023	0.000***	0.027	0.023**
BSIZE	0.010	0.000***	0.001	0.683	0.010	0.009***
IND	0.178	0.003***	-0.046	0.145	0.186	0.053*
MET	0.039	0.476	-0.023	0.229	-0.007	0.846
FCEO	0.146	0.044**	-0.183	0.036**	0.078	0.628
Industry dummy	No		Yes		No	
Year dummy	Yes		Yes		Yes	
Number of observations	360		360		360	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

**Table 6**  
2SLS: The moderating role of female directors' tenure and Family firms on short term.

Variables	Model 1-SHRT <sub>it</sub>		Model 2-SHRT <sub>it</sub>	
	β	P.value	β	P.value
BGD	0.639	0.004***	0.416	0.018**
FTENURE	0.020	0.002***		
F.NF			0.194	0.010**
BGD* FTENURE	-0.100	0.001***		
BGD* F.NF			-0.603	0.019**
SIZE	-0.021	0.000***	-0.024	0.000***
ROA	0.032	0.301	0.080	0.001***
LEV	-0.001	0.946	0.010	0.144
FAGE	0.027	0.000***	0.031	0.000***
BSIZE	0.001	0.798	0.001	0.632
IND	-0.126	0.001***	-0.004	0.878
MET	-0.002	0.469	-0.003	0.385
FCEO	-0.054	0.130	-0.116	0.098*
Industry dummy	Yes		Yes	
Year dummy	Yes		Yes	
Number of observations	360		360	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

impeding women's contributions to ESG, particularly discrimination stemming from gender-based minority representation in developing countries. The effect of negative stereotypes on the performance and decision-making capabilities of directors, particularly those in minority positions such as female directors, is well documented. Given the persistent underrepresentation of female directors on corporate boards in developing countries, there is a compelling case for policymakers to enact legislation that addresses these stereotypes. Such measures could

**Table 7**  
GMM: the mediation analysis using female executive directors (Fexe) as independent variable.

Variables	Model 1-ESG <sub>t</sub>		Model 2-SHRT <sub>it</sub>		Model 3- ESG <sub>it</sub>	
	β	P.value	β	P.value	β	P.value
ESG (t-1)	0.869	0.000***			0.732	0.000***
SHRT (t-1)			0.708	0.000		
SHRT					-0.272	0.003***
Fexe	-0.310	0.043**	0.466	0.010**	-0.197	0.198
Control	Included		Included		Included	
Industry dummy	Yes		Yes		Yes	
Year dummy	Yes		Yes		Yes	
AR (1)	0.002		0.000		0.002	
AR (2)	0.790		0.342		0.705	
Hansen test	0.242		0.224		0.412	
Number of observations	288		288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

include mandating a higher proportion of women on boards, thereby advancing gender parity and potentially mitigating the biases that hinder female directors' effectiveness. Furthermore, our results highlight the impactful role of a female director's board tenure in reducing negative gender stereotypes. Long tenure on the board enhances the business acumen and experience of minority directors, which, in turn, facilitates their effective participation in strategic decision-making. As a result, their perspectives are less likely to be overlooked by the majority, enabling a more inclusive approach to governance. Thus, considerations should be made for legislation to prevent gender-based discrimination related to board tenure. Investors should also evaluate directors based on their performance rather than preconceived stereotypes about

**Table 8**  
GMM: the moderation analysis using Fexe instead of BGD.

Variables	Model 1-SHRT <sub>it</sub>		Model 2-SHRT <sub>it</sub>	
	β	P.value	β	P.value
SHRT (t-1)	0.661	0.000***	0.616	0.000***
Fexe	0.322	0.027**	0.092	0.274
FexeT	0.008	0.264		
F.NF			0.14	0.000***
Fexe* FexeT	-0.159	0.040**		
Fexe* F.NF			-0.734	0.032**
Control	Included		Included	
Industry dummy	No		Yes	
Year dummy	Yes		Yes	
AR (1)	0.000		0.000	
AR (2)	0.135		0.184	
Hansen	0.162		0.387	
Number of observations	288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

**Table 9**  
GMM: the mediation analysis using Blau index as alternative measurement of BGD.

Variables	Model 1-ES <sub>it</sub>		Model 2-SHRT <sub>it</sub>		Model 3- ES <sub>it</sub>	
	β	P.value	β	P.value	β	P.value
ES (t-1)	0.855	0.000***			0.855	0.000***
SHRT (t-1)			0.677	0.000***		
SHRT					-0.171	0.001***
Blau	-0.178	0.000***	0.086	0.006***	-0.161	0.003***
Control	Included		Included		Included	
Industry dummy	Yes		No		Yes	
Year dummy	Yes		Yes		Yes	
AR (1)	0.001		0.000		0.001	
AR (2)	0.685		0.249		0.849	
Hansen test	0.516		0.452		0.660	
Number of observations	288		288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

**Table 10**  
GMM: the moderation analysis using Blau index as alternative measurement of BGD.

Variables	Model 1-SHRT <sub>it</sub>		Model 2-SHRT <sub>it</sub>	
	β	P.value	β	P.value
SHRT (t-1)	0.595	0.000***	0.553	0.000***
Blau	0.178	0.010**	0.191	0.035**
FTENURE	0.005	0.324		
F.NF			0.304	0.009***
Blau * FTENURE	-0.027	0.006***		
Blau * F.NF			-0.761	0.019**
Control	Included		Included	
Industry dummy	No		Yes	
Year dummy	Yes		Yes	
AR (1)	0.000		0.000	
AR (2)	0.170		0.231	
Hansen	0.450		0.337	
Number of observations	288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

women, alleviating pressures to focus solely on short-term results over long-term outcomes such as ESG. Overall, our study provides a nuanced understanding of the intricate relationship between gender diversity, temporal orientation, and ESG outcomes, offering valuable insights for researchers and practitioners alike.

5.3. Limitations and suggestions for future studies

Despite its theoretical and practical contributions, this study has some limitations. Our arguments rely on a sample from a developing country where gender stereotypes are prevalent. Developed countries present a different context, leaving room for future research to extend

**Table 11**  
GMM: the mediation analysis using environmental score (E) as a dependent variable.

Variables	Model 1-E <sub>t</sub>		Model 2-SHRT <sub>it</sub>		Model 3- E <sub>it</sub>	
	β	P.value	β	P.value	β	P.value
E (t-1)	0.934	0.000***			0.786	0.000***
SHRT (t-1)			0.659	0.000***		
SHRT					-0.270	0.001***
BGD	-0.233	0.002***	0.172	0.002***	-0.062	0.301
Control	Included		Included		Included	
Industry dummy	Yes		No		Yes	
Year dummy	Yes		Yes		Yes	
AR (1)	0.006		0.000		0.014	
AR (2)	0.319		0.224		0.183	
Hansen test	0.469		0.245		0.311	
Number of observations	288		288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

and compare our findings regarding the influence of female directors on a firm’s temporal orientation in developing versus developed countries. **Additionally**, we relied on secondary data to validate our arguments. Future research could utilize primary and qualitative data (i.e., interviews or surveys) to gain a deeper understanding of the challenges that female directors encounter on the board, which could inhibit their contribution to ESG decisions. **Moreover**, the results of our additional analyses did not corroborate the critical mass theory. Future research could elucidate the influence of stereotypes by comparing the applicability of the critical mass theory across developed and developing countries. Future studies may also examine differences between male and female directors in terms of characteristics and experiences, such as comparing the board tenures of male and female directors and how these affect ESG decisions.

6. Conclusion

Despite growing interest in increasing female representation on corporate boards, their contributions to strategic decision-making remain nuanced and somewhat ambiguous. The existing literature examining the relationship between board gender diversity (BGD) and Environmental, Social, and Governance (ESG) performance has yielded inconsistent results. Our study investigated the role of temporal orientation as a mediating mechanism to clarify how female directors impact strategic decisions. Using a sample of South African firms from 2015 to 2020, our Generalized Method of Moments (GMM) results demonstrated that BGD negatively influences ESG. This relationship is mediated by short-term orientation, evidenced by the finding that BGD positively correlates with short-term orientation, which, in turn, adversely affects ESG.

Furthermore, our study sheds light on the crucial role played by the tenure of female directors and the context of family firms in shaping the BGD-ESG dynamic. We observed that female directors with longer

**Table 12**  
GMM: the mediation analysis using social score (S) as a dependent variable.

Variables	Model 1-S <sub>it</sub>		Model 2-SHRT <sub>it</sub>		Model 3- S <sub>it</sub>	
	β	P.value	β	P.value	β	P.value
S (t-1)	0.942	0.000***			0.942	0.000***
SHRT (t-1)			0.659	0.000***		
SHRT					-0.089	0.049**
BGD	-0.154	0.018***	0.172	0.002***	-0.133	0.066*
Control	Included		Included		Included	
Industry dummy	Yes		No		Yes	
Year dummy	Yes		Yes		Yes	
AR (1)	0.001		0.000		0.001	
AR (2)	0.180		0.224		0.141	
Hansen test	0.464		0.245		0.682	
Number of observations	288		288		288	

\*, \*\*, and \*\*\* refer to the significance is at 0.10, 0.05, and 0.01 levels, respectively.

tenures on boards gain increased legitimacy and experience, which mitigates the negative stereotypes and enables them to contribute more effectively to ESG initiatives. In the context of family firms, characterized by their long-term orientation and focus on socioemotional wealth, a supportive environment is created. This environment facilitates female directors in aligning their decisions with family values and prioritizing long-term reputation over short-term gains. The robustness of our results is confirmed through the utilization of alternative techniques and varied measurements of independent and dependent variables.

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**Appendix 1. Measurements of study variables**

Variable	Abbreviation	Measurement
ESG	ESG	ESG score obtained from the Refinitiv Eikon database.
Board gender diversity	BGD	The ratio of female directors on the board.
Female executive	Fexe	The ratio of female executive directors on board
Blau index for diversity	Blau	$1 - \sum_{i=1}^n p_i^2$ <b>Where:</b> <b>P<sub>i</sub></b> : the proportion of boardroom members in each category. <b>n</b> : the total number of directors on the board.
Short-term orientation	SHRT	Constructed by calculating the percentage of total short-term keywords relative to the sum of both short- and long-term keywords.
Female directors' tenure	FTENURE	The average length of time that female directors have served on the board.
Female executive tenure	FexeT	The average length of time that female executive directors have served on the board.
Family firms	F.NF	Dummy variable takes 1 if the firm owned by family 0 otherwise.
Firm size	SIZE	Natural logarithm (ln) of the firm's total assets.
Return on assets	ROA	Earnings before interest and tax divided by total assets.
Leverage	LEV	The ratio of total debt to total assets.
Firm age	FAGE	The natural logarithm (ln) of the number of years since the firm's foundation.
Board size	BSIZE	Total number of board members of the firm.
Board independence	IND	Number of independent directors/total number of board directors.
Board meeting	MET	Total number of meetings held annually.
Female CEO	FCEO	Dummy variable that equals 1 if the firm's CEO is a woman and 0 otherwise

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**Data availability**

Data will be made available on request.

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