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Men are from Mars, women are from Venus: on lenders' stereotypical views and the implications for a firm's debt

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Abstract
Building on social construction theory, this paper investigates how the presence of women on the board may affect access to credit because of lenders' gender-stereotyped views. In our view this translates into different levels of the firm's bank debt. To evaluate the impact of gender as a social construct, we designed a within-country analysis in Italy by distinguishing between egalitarian and non-egalitarian contexts. To test our hypotheses, we used a sample of 3514 Italian listed and unlisted firms. Results showed a lower level of bank debt for firms with a relevant number of women in the boardroom (i.e., critical mass) if located in a non-egalitarian context. This effect was partially mitigated in firms during a crisis situation. While extant research explains gender-based differences in a firm's financial structure by a change in inner-board mechanism/dynamics caused by differences in men/women characteristics, we argue that the social construction of gender may also induce lenders in different contexts to view boards with women differently in relation to access to credit.

Keywords Gender · Board of director · Financial structure · Social construction theory

1 Introduction

In this paper, we adopted the theoretical framework of the social construction theory to understand whether the presence of women on the board of directors (BoD) influences the ability of firms to access credit.

A firm's financial structure is crucial in supporting its development, survival, and growth ability (de Andrés et al., 2020; Galli et al., 2020; Marlow & Patton, 2005; Vermoesen et al., 2013). Empirical analyses have shown that women-led businesses

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face differences in credit access conditions compared to men-led businesses (Aristei & Gallo, 2021; Bellucci et al., 2010; Carter et al., 2007; Coleman, 2000; Marlow & Patton, 2005; Muravyev et al., 2009). The reasons behind these differences have been traced to demand-side and/or supply-side factors.

Regarding demand-side factors, some scholars argue that women-led firms are less likely to apply for a loan than men-led enterprises (Treichel & Scott, 2006) due to a higher risk aversion (Teodósio et al., 2021) or because they anticipate being rejected (Moro et al., 2017).

Regarding supply-side factors, some scholars argue that the lender's attitude, opinions, and way of thinking may influence his or her decision to lend (Awartani et al., 2016) and that this attitude may change depending on the gender of the applicants (Bellucci et al., 2010; Beck et al., 2018; Carter et al., 2007; de Andrés et al., 2020; Galli et al., 2020; Muravyev et al., 2009).

De Andrés et al. (2020), in their analysis of a sample of Spanish companies, found that women entrepreneurs are less likely to obtain a loan during the founding year. Their results suggest that lenders adopt a double standard when evaluating loan applications due to implicit (unconscious) discrimination. Bellucci et al. (2010) found that women entrepreneurs face tighter credit availability and more stringent contract terms, such as higher interest rates and greater collateral requirements. They found that differences in riskiness of entrepreneurial ability cannot explain the contract term differentials between men and women entrepreneurs. Carter et al. (2007) analyzed the criteria and processes used by bank officers in assessing loan applications and found that women and men loan applicants are likely to be assessed on different criteria, supporting the idea of a double standard of evaluation (De Andrés et al., 2020). Carter et al. (2007) concluded that "gender plays a role in the credit decision-making process as loan officers evaluate male and female applicants not just on the merits of their individual case, but also on the basis of their perceptions of men and women that have been imbued by gender socialization processes" (p.439).[1]

In this regard, we argue that the dominant culture in a specific geographic context may play a key role in affecting the lender's attitude toward men and women applicants.[2]

The analysis of how culture can influence lenders' attitudes toward men and women can be usefully conducted by framing it within the social construction theory (Berger & Luckmann, 1966; Ridgeway, 1991). Social construction theory postulates that the ways of thinking, feeling, and behaving for men and women is influenced from childhood by sex-role socialization (Nelson, 2020; Ruble & Martin,

[1] In literature, "female" has been broadly used as the adjective form of "woman." However, "female" means a biological category according to the anatomy, while a "woman" is an entire human person. Therefore, while "woman" is technically a noun, we suggest using it as an adjective to create a more inclusive meaning that emphasises gender over biological sex. Same for "man" and "male". In literal quotations we have not altered the use of noun "woman". The choice of words shape scientific knowledge, the questions asked, the results obtained and the interpretations made. Further, rethinking language also involves rethinking concepts and theories.

[2] A lender is an individual, a public or private group, or a financial institution that makes funds available to someone with the expectation that they will be repaid. Lenders, as part of the social context, are influenced by the culture in which they operate.

1998; Ruble et al., 2006), which also has a prominent role in shaping individual perceptions of others (Wood & Eagly, 2002).

Since childhood, through sex-role socialization, men and women learn how women and men are expected to behave in the society they live in. They learn what it means, in a given social context, they learn what it means to be a woman or a man and build their beliefs about men's and women's innate characteristics (i.e., stereotypes). According to a widespread "think manager- think male" stereotype, these widely shared beliefs may affect the way lenders perceive women or men managers and directors according to a widespread "think manager—think male" stereotype (Ryan et al., 2011). Our goal is to capture if, based on the theoretical framework of the social construction theory, the presence of women on the board of directors (BoD) influences the ability of firms to access credit and whether this influence changes according to the culture prevailing in a given geographical context.

To adequately capture the role of shared beliefs in shaping stereotypes, our analysis was placed in Italy, where cultural differences (specifically about women's status) among regions are well-acknowledged in the literature (Amore et al., 2014) and where gender-based stereotypes emerge differently at a local level. We carried out a within-country analysis and referred to egalitarian and non-egalitarian cultures to signal the different expectations on the role of women in each area. Specifically, we considered that man-oriented, patriarchal, non-egalitarian cultures tend to identify and emphasize differences in personality traits as masculine or feminine and reinforce the stereotypical view of woman (Grable, 2000; Jianakoplos & Bernasek, 1998; Powell & Ansic, 1997). Conversely, in egalitarian cultures, differences in personality traits and the aforementioned stereotypical views tend to be less accentuated (Wood & Eagly, 2002).

Further, we extend the so-called "glass-cliff" that reveals that women are often considered more suitable for managing crisis situations (Kulich & Ryan, 2017; Ryan et al., 2016). Previous contributions suggest that women are more likely to achieve top positions when they are accomunated with crisis and a higher risk of failure (Bruckmüller & Branscombe, 2010; Haslam & Ryan, 2008; Ryan & Haslam, 2005). On the contrary, as long as a firm performs well, there should be no apparent need to change, following in a bias toward preserving the status quo (Bruckmüller & Branscombe, 2010). If men have managed the firm into difficulty, selecting a woman in top position will appear as a solution to turn things around (see Ryan & Haslam, 2007 for a related discussion). This "think crisis - think female" (Ryan et al., 2011) stereotype is at odds with the aforementioned "think manager - think male" stereotype and can contribute to our understanding of the lenders' view in the evaluation of women in their request for debt. Specifically, our second hypothesis looked at corporate crisis situations to further understand if the presence of a stereotyped view may affect access to credit. We used a sample of 3514 Italian firms to test our two hypotheses. Specifically, we hypothesized that the number of women on a board

(Bannò & Nicolardi, 2020; Konrad et al., 2008) affects a firm's access to credit according to the egalitarian/non-egalitarian context in which the firm operates. As long as the presence of women directors results in the build-up of critical mass (i.e., at least three women in the boardroom), this is perceived by lenders, and they will be influenced accordingly. Results show a lower level of bank debt for firms with a critical mass of women in the boardroom if located in a non-egalitarian context (first hypothesis). According to the potential for stereotypical views, this effect is partially mitigated in firms facing a corporate crisis situation (second hypothesis).

This paper makes several contributions to the literature, and our results have some interesting policy and managerial implications.

First, this paper advances the social construct theory through an empirical study. We built our hypotheses on the socially constructed stereotyped view of gender roles that characterise Italy at a local, regional level. By leveraging the contrast between egalitarian and non-egalitarian contexts of different areas, we show how socially constructed stereotypes may influence lenders' decisions on credit access and, eventually a firm's access to external resources. To the best of our knowledge, for the first time, the Italian within-country analysis adopted in this study captures the effects of socially constructed stereotypes within the same regulatory environment.

Second, this paper advances the literature on board gender composition by identifying the external relevance of critical mass (De Masi et al., 2021). Critical mass is traditionally studied as having internal relevance for the board of directors, affecting only the board's inner workings and processes by making women visible (Konrad et al., 2008; Torchia et al., 2011). For the first time, we introduce the concept of external relevance of the critical mass: we show that reaching a critical mass also implies external visibility for women, which plays a role in how boards are viewed in different contexts. In appointing board members, firms need to consider the consequences in terms of socially constructed stereotypes that external visibility implies: if not adequately addressed, these consequences may lead to unexpected outcomes that may be at odds or undermine the expected (and sought-after) outcomes of board gender composition.

Finally, this paper has many policy and managerial implications. In the last few years, governments have had to deal with a loss of revenues, an increase in the demand for public expenditure, and tightening global financial conditions (Hevia & Neumeyer, 2020). As such, the definition of effective public financial incentives is critical. Following previous contributions about women's influence on firms' results (Khan & Vieito, 2013; Robb & Watson, 2012), strategic developments (Mallin & Brush, 2006; Morris et al., 2006; Sonfield et al., 2001), and management of crises (Byrnes et al., 1999; Fehr-Duda et al., 2006), this paper advances the understanding of the relationship between the presence of women on boards, the peculiarities of such a context, and their implications for firms' strategies and future development (Bannò et al., 2020).

2 Theoretical background

2.1 Gender as a social construct

Berger and Luckman introduced the concept of social construction in their seminal work in 1966. Social construction assumes that people create their understanding of the world jointly with others rather than individually: "The theoretical formulation of reality, whether that be scientific or philosophical or even mythological, does not exhaust what is "real" for the members of a society" (Berger & Luckman, 1966, p. 15). In particular, this understanding of reality includes expectations on others' behaviour. These expectations are built through social interaction and propagate in society when individuals are treated coherently with beliefs: social interaction spreads beliefs through behaviour, "creating a diffusion process that makes widely shared beliefs possible" (Ridgeway & Erickson, 2000, p. 579). Consequently, the shared understanding of reality varies across time and cultures because it is a consequence of social interaction. It is established and applied by sharing language, practices, belief systems, and collective rules (among other forces) (Nelson & Constantinidis, 2017).

Within this interpretative framework, gender is a social construct that establishes expectations of men and women and what they can and should do (Nelson, 2020; Ruble & Martin, 1998). Management scholars described the social construction of gender as a framing mechanism with fundamental works provided by Nelson (2020), Ely and Padavic (2007), and Calás et al. (2009).[3] Social construction is constantly created and recreated by human interaction: gender is a human production that depends on everyone "doing gender" (West & Zimmerman, 1987). It starts with the assignment to a sex category at birth and continues for a lifetime through the assignment of name, dress, and social role. The implicit statements attributed to "maleness–femaleness" in terms of status result in gender being a definite form of disparity. The direct consequence is an attribution of resources and power attributed to "maleness–femaleness" in terms of status result in gender: "Gender is an extraordinarily relevant category for social behaviour because sex (man–woman), along with age, serves as a primary orienting characteristic in our interpersonal relations—people are sex categorized in almost every encounter. Put simply, gender usually influences positively for men and negatively for women at some level" (Nelson & Constantinidis, 2017, p. 231).

Ruble et al. (2006) provide a comprehensive research overview on gender development in children, suggesting that "gender stereotypes are well developed at the end of preschool" (p. 864). For instance, it has emerged that children entering

[3] Ahl and Nelson (2015) show the existence and consequence of gender as a social construct on academic work and national policy. Jennings and Brush (2013) propose in their Academy of Management Annals review that the discussion on entrepreneurship and management as a gendered phenomenon within a social constructionist perspective may be the greatest achievement of the now quite extensive literature on women management and entrepreneurship.

elementary school have extensive knowledge about which activities are linked to being a man or woman and that stereotypes are held quite rigidly.

Nelson (2020) describes a social nature of knowledge creation that may provide an interesting interpretation of research results. Coherently, human minds are influenced by the so-called "cognitive gender," which refers to the tendency to categorize actions and behaviours in gendered terms (Agars, 2004; Perry et al., 1994; Ryan & Haslam, 2007). Thus, gender stereotypes are based on shared beliefs about the qualities associated with each sex and the characteristics attributed to gender that define how men and women are (i.e., descriptive stereotypes) and how they should be (i.e., prescriptive stereotypes) (Heilman et al., 2004; Schein, 2001). Stereotyped knowledge has been found to vary across ethnicity/cultures, with European, Hispanic/Latino, and Asian children showing greater stereotyping (Ruble et al., 2006).

To summarize, as a social construction, gender is a social process that has implications in day-to-day life and how men/women managers are supposed to manage a firm. Extant economics and management literature on gender has borrowed evidence on the differences between men and women from other fields, such as psychology (see Chen et al., 2016; Huang & Kisgen, 2013; Sonfield et al., 2001; for an earlier study, see Burgess & Borgida, 1999). From those contributions, women are associated with more communal traits, such as eloquence, empathy, kindness, gentleness, compassion, helpfulness, and timidity, whereas men are associated with more agentic traits, such as autonomy, self-determination, fierceness, instrumentality, and courage (Pounder & Coleman, 2002; Powell, 2018). Expectations concerning the qualities of good entrepreneurs/managers often dictate the type of role considered appropriate for men and women based on their gender, leading to a situation in which the requisite characteristics for specific positions (e.g., CEO) are defined according to gender (Heilman, 1997; Nelson, 2020).

According to these findings, extant research supports the idea of a link between competence and gender which can be summarised in the two beliefs above "think manager—think male" and "think crisis—think female" (Bruckmüller & Branscombe, 2010; Haslam & Ryan, 2008; Ryan & Hasla, 2005).

However, this link results from interpersonal interactions among individuals based on shared beliefs about the qualities associated with each sex. This interaction creates a self-perception that leads individuals to implement expectations of themselves generated by the interactions with others (Ridgeway & Erickson, 2000).

Scholars have frequently analysed historical determinants of gender roles, and these have deep-rooted origins in factors such as geography, language, and pre-industrial societal characteristics (see Giuliano, 2020 for a comprehensive review).[4] Deep-rooted work specialisation, cultural values and gender beliefs are transmitted and reinforced by language (i.e., the prevalence of grammatical gender and the linguistic structure fosters the transmission of gender beliefs).

[4] For a review on how differences in the role of women in society are context-specific refer to the seminal work of Ester Boserup (1970). She documented the case of the impact of different types of agricultural technology and inspired other research in this direction.

As a consequence of this social construction process, the expectations one has of women can become a self-fulfilling prophecy: people, whether men or women, will tend to see women as having less status and competence in achieving tasks related to the running of a firm (Nelson & Constantinidis, 2017).

In conclusion, perceived gender differences in terms of the personal traits of individuals is a social construction and are context-specific; they will change over time through a process of social learning (Giuliano, 2020).

2.2 'Men are from Mars; Women are from Venus': nurturing lender's stereotypes

Existing research on gender in economics and management literature has been influenced by and contributed to the social construction of gender stereotypes. According to Nelson (2020), mainstream economics has a profoundly gendered nature: "definition, models, and methods of mainstream economics have been built on a wholehearted adoption of areas of life and characteristics culturally associated with masculinity, and an equally wholehearted rejection of those associated with femininity" (p. 4). With specific reference to research on gender differences in preferences, Nelson (2020) claims that many articles suffer from confirmation bias, simplistic thinking, and publication bias. In particular, confirmation bias consists of over-hyping results that show that men are different from women in terms of peculiar characteristics and, vice versa, neglecting cases where no statistically significant difference can be found. We agree with that evidence and we build our hypothesis based on it.

Earlier research in management suggests that women are cautious, lack confidence, are low aggressive, are easy to persuade, and have limited leadership and problem-solving abilities when making decisions (Johnson & Powell, 1994). Furthermore, extant literature suggests that women are not different in terms of motivation, the desire for independence, or self-achievement (Littunen, 2000; Sarri & Trihopoulou, 2005), but they still differ from men in how and when they will reach their goals because they want to balance the demands of work, family, and their personal lives, and they transfer this idea into an organisation (Brush et al., 2019; Morris et al., 2006). Finally, women have been traditionally described as rarely specialising in finance (Sjöberg & Engelberg, 2009). We consider that those results nurture stereotypes and, in the end, also may influence management practice.

Similar results can also be found in studies specifically analysing gender-based differences in debt financing. In particular, the literature focused on two related topics (Carter et al., 2007). First, researchers have sought to unravel the complex relationship between the gender of an entrepreneur (or the gender of BoD members) and bank debt about the amount of debt, the terms of credit negotiated, and the perceived attitudes of bank lending officers to women entrepreneurs and managers (i.e., supply-side issue) (see Coleman, 2000; Ely & Padavic, 2007; Haynes & Haynes, 1999; Koenig et al., 2011; Verheul & Thurik, 2001). Second, researchers have tried

to understand whether gender-based differences in debt financing are a consequence of a demand-side issue, such as risk or debt aversion by women entrepreneurs and managers (Bellucci et al., 2010; Read, 1998; Watson & Robinson, 2003).

Regarding demand-side issues, a key result from management studies is that women act differently from men by displaying more risk-averse behaviour (for a recent and comprehensive review, see Teodósio et al., 2021). However, as already mentioned, these findings are generally based on experimental studies on gambling (Ahmed & Atif, 2021), and when managerial settings are specifically considered, there is no difference in decision making between men and women (Faccio et al., 2016; Johnson & Powell, 1994). Dwyer et al. (2002) found that knowledge disparities could substantially drive the greater risk aversion behaviour among women described in the literature. Consequently, women, when well informed, are not necessarily risk-averse. Specifically, Ahmed and Atif (2021) and Faccio et al. (2016) argue that women are not risk-averse, but uncertainty averse, as most experimental evidence on risk aversion is actually based on gambling and lottery experiments, and board decision-making processes are not comparable to gambling. Furthermore, Sila et al. (2016) differentiated between lottery/gambling risk and firm-level risk and found no evidence of a correlation between the presence of women on boards and risk. Moreover, recent studies have shown that women directors are particularly responsible (Fondas, 2000), conscientious, and take more time to make decisions (Faccio et al., 2016), especially during periods of crisis (Cesaroni et al., 2015; Schmitt et al., 2008). Furthermore, corporate financial literature considers women to be less overconfident than their men counterparts (Croson & Gneezy, 2009; Huang & Kisgen, 2013) and finds that men avoid situations of loss such as corporate crises and usually leave companies in those circumstances (Daily & Dalton, 2003; La Rocca et al., 2020). Moreover, the qualities valued as desired for a manager in an unsuccessful firm were more analogous to images of average women than of average men. Thus, men should be favoured for top positions in case of success because they "think manager–think male", on the contrary, women should be favored during crisis due to "think crisis–think female" (Dasgupta & Asgari, 2004).

Building on the social construction theory, we consider that there is supply-side discrimination due to stereotypes, i.e., widely shared beliefs about men's and women's innate characteristics that may reveal gender discrimination regarding what it means to be a woman manager or a man manager in society. For instance, being a member of a BoD is commonly seen as a masculine pursuit, and the idea of being entrepreneurial is coded as aggressive, autonomous, innovative, risk-taking, and courageous (Alsos et al., 2013; Chen et al., 2016). Accordingly, studies have suggested that social constructs regarding gender depict a woman and man entrepreneurs and managers differently and that women may be at a disadvantage due to not being naturally linked to behaviours identified as masculine (Bruni et al., 2004; Javidan et al., 2016). Expectations concerning the qualities of good entrepreneurs/managers often dictate the type of role considered appropriate for men and women based on their gender, leading to a situation in which the requisite characteristics for some responsibilities are defined in those terms (Heilman, 1997; Nelson, 2020). We consider, for instance, the effect of a categorical interpretation according to gender stereotypes due to phrases such as 'women are more risk-averse than men' (Nelson,

2020). With the stigma of women being risk-averse, lenders may be reluctant to concede debt to women because of the view that women directors may only be involved in conservative decision-making, which may be damaging to the firm's growth (Ahmed & Atif, 2021).

We advance the idea that the consequence of this biased way of communicating scientific knowledge is to nurture the gender-stereotyped view that women present some exclusively masculine traits or feminine (Grable, 2000; Jianakoplos & Bernasek, 1998; Powell & Ansic, 1997). In our view, supply-side discrimination is a consequence of stereotypes and widely shared beliefs about men's and women's innate characteristics regarding what it means to be a woman or a man manager in society. As such, when facing lenders, women and men may experience different evaluation standards. In this paper, we argue that men and women are equally capable in terms of achieving desired outcomes from decision making because competence is not a gender-based issue (D'Allura et al., 2021).

In summary, most of the existing literature on gender differences in management supports and nurtures two opposite stereotypical views on the link between gender and competences. First, a "think manager - think male" stereotype is based on the belief that males' innate characteristics better fit with the role of manager for which the aforementioned masculine traits are considered more desirable (Ryan et al., 2011). Second, a "think crisis - think female" stereotype is based on the belief that women's innate characteristics (i.e., the aforementioned feminine traits) are more suited to crisis management (Ryan et al., 2011).

2.3 The social construction of stereotypes: a within-country analysis

Gender inequality is not permanent or inevitable (Ruble et al., 2006). Through daily interactions, people construct reality and define a social structure that is somehow persistent but may vary across time and cultures (Nelson & Constantinidis, 2017). For example, people living in small and integrated communities share common values and beliefs and develop collective consciousness. Indeed, community members think and act alike because they have a shared culture and shared experiences from living in close-knit areas (Durkheim, 1964 [1893]).

For this paper, we employ a within-country analysis to verify the effect of small and integrated communities. With this design choice, we aim to exclude from our analysis the potential effects of cross-country differences related to the legal system, fiscal policies, and market regulations on a firm's financial structure. For example, there may be country-specific factors (e.g., differences in banking operating costs, differences in the average size of banks, differences in taxation, and market conditions) that may affect a cross-country comparison (Awartani et al., 2016; Carbó et al., 2009; Fan et al., 2012).

We use the term non-egalitarian context, as opposed to egalitarian context, to reference the characteristics of a male-oriented, patriarchal context in which gender differences are significant, pervasive, and almost taken for granted. Specifically, in an egalitarian culture, all individuals are born equal, and all members of society have equal opportunities. Referring to gender, the egalitarian context aims to minimise discrepancies between men and women; differences in personality traits and the aforementioned stereotypical views tend to be less accentuated (Wood & Eagly, 2002). Conversely, non-egalitarian cultures tend to identify and emphasise personality traits as masculine or feminine and reinforce the stereotypical view of gender (Grable, 2000; Jianakoplos & Bernasek, 1998).

As previously mentioned, gender and gender stereotypes, as social constructions, are context-dependent: they are created jointly by people within a specific context. When making a distinction between egalitarian and non-egalitarian, the aim is to capture the role of cultural beliefs in shaping gender stereotypes.[5]

In this paper, we analysed the effect of gender stereotypes on a firm's financial structure and adopted a within-country analysis to capture differences between egalitarian and non-egalitarian contexts effectively. We focussed on the case of Italy, in which cross-regional differences in terms of egalitarian and non-egalitarian contexts are well-acknowledged in the literature (Banca d'Italia, 2014). We considered Italy an interesting laboratory because of the culture and views on gender stereotypes embedded in a long historical and economic path (Mannarini et al., 2019; Villano & Passini, 2018). Noticeable disparities exist across regions in terms of gender roles. Traditional beliefs of the family in which the woman is the homemaker and the man is the breadwinner depict Southern regions of the country. These beliefs, which are exhibited less often in central Italy, are much less widespread in the northern regions of Italy (Amore et al., 2014). To date, Italy still has a great inconsistency: almost half of the territory lives in social, economic, and civil conditions so dissimilar as to make it seem almost a nation apart (Eurispes, 2021; Greco, 2021). The within-country analysis allowed us to leverage these differences to aid our comprehension of the phenomena being analysed.

2.4 Critical mass: internal and external relevance

Board gender composition (i.e., the number of women on the board) is generally supposed to have an impact on a firm's performance (i.e., internal relevance) (see, e.g., Erhardt et al., 2003; Campbell & Minguez-Vera, 2008; Moreno-Gomez et al., 2018); however, it may also be detected by external actors for use in their evaluations (i.e., external relevance) (Johnson et al., 2013). Lenders are among these external actors.

[5] Experimental research in economics has stressed the importance of institutional factors related to context in explaining women's roles in firms as the output of perceived stereotypes. For instance, Gneezy et al. (2009) found that women compete more than men in a matriarchal society but that the opposite is true in a patriarchal society.

As far as internal relevance is concerned, previous contributions suggest that women, when appointed to a board, can be influential only if they have individual power (e.g., as CEO), if they have specific and greater prior board experience and network ties such as wider interlinks with other boards (see, e.g., Bannò et al., 2021; Westphal & Milton, 2000; Cook & Glass, 2015). In other words, it is not sufficient for a woman to enter a board of directors to make a contribution; something "more" (compared to man board members) is needed.

In this regard, Konrad et al. (2008) introduced the concept of critical mass as the minimum number of women to appoint to a board to make their contribution effective and to gain internal relevance: three is the "magic number" (p. 146). Instead, when only one woman is serving on the board, she can be ignored, dismissed, not taken seriously or otherwise excluded (Konrad et al., 2008). A lone woman on the board may be seen as a symbol or a token (Asch, 1951, 1955; Tanford & Penrod, 1984); her impact may be feeble, and she risks being invisible. Furthermore, when two women serve on the board, they are often looked at as "conspirators"; they may have a larger impact on the board, but still, they have to work hard to be heard. In both cases (i.e., one or two women), gender represents a barrier to acceptance and communication. When three or more women serve on the board (i.e., critical mass), this barrier falls, their presence on the board becomes effective, they may freely contribute to board decision-making, they have a noticeable impact on the board dynamics because they acquire internal relevance (Konrad et al., 2008).

On the one side, empirical studies mainly consider the internal relevance of critical mass and focus on how board composition affects a firm's performance (see, e.g., Erhardt et al., 2003; Campbell & Minguez-Vera, 2008; Moreno-Gomez et al., 2018), on the other side, how critical mass interacts with external factors is less investigated (Johnson et al, 2013). Post and Byron (2015), in their attempt to reconcile the mixed evidence in the literature, analysed the relationship between women on boards and firm financial performance and found that contextual factors (and socio-cultural contexts in particular) are critical in moderating the relationship above. Specifically, they found that the relationship between women board representation and market performance "is positive in countries with greater gender parity (and negative in countries with low gender parity)—perhaps because societal gender differences in human capital may influence investors' evaluations of the future earning potential of firms that have more female directors" (p. 1546). In other words, investors and lenders look at board composition in their evaluations. Holder-Webb and Sharma (2010) found that lenders are sensitive to financial conditions and the perceived reliability of financial reporting and that their decisions are also affected by governance quality, which they measure by board composition. Board quality impacts the cost of debt (Fields et al., 2012; Rahaman & Al Zaman, 2013), and management is important for the pricing and definition of debt contracts by creditors (Karavitis et al., 2021; Rahaman & Al Zaman, 2013).

In short, investors and lenders look at board composition when evaluating firms, and board composition is generally considered because it is supposed to impact a firm's performance. This implies that board gender composition is clearly detected by these external actors and has an external relevance. Building on this evidence, we argue that the critical mass has external relevance whenever it is perceived by the

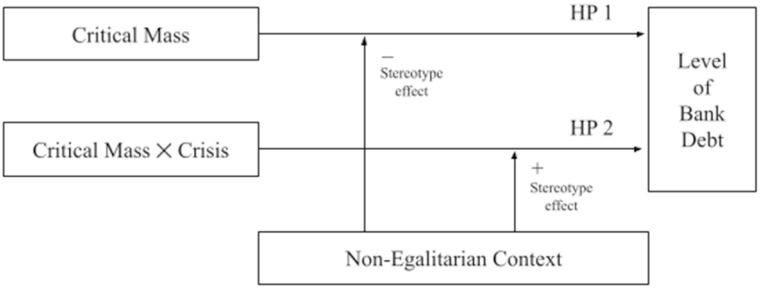

Fig. 1 The moderating role of a non-egalitarian context

subjects who have to make decisions within a specific context. Here, we argue that when critical mass is reached, visibility is also achieved outside the board.

There are, therefore, two elements of critical mass to be considered. The first is internal relevance and the overcoming of prejudices and stereotypes within the board, which allows them to contribute to the functioning of the decision-making body. The second is external relevance; even outside the organisation, the organisation is perceived differently. Previous research (Holder-Webb & Sharma, 2010; Fields et al., 2012; Muller-Kahle & Lewellyn, 2011; Rahaman & Al Zaman, 2013) proves that lenders look inside the organisation, so they see that critical mass has been reached and the stereotype is triggered. Thus, our study introduces an external relevance of critical mass, traditionally described exclusively for its internal relevance (Joecks et al., 2013; Konrad et al., 2008), that is, the lenders' stereotyped view of the presence of women on the board. We argue that the external relevance of critical mass plays a role in how boards are perceived from outside the organisation in different contexts. In a stereotype-driven, non-egalitarian context, the outside view of the board will assume masculine or feminine traits according to the number of women on the board and the power they hold. As such, lenders' views will be affected by the same gender-based stereotypes and will change lenders' attitudes towards the board.

The hypotheses on how critical mass affects lenders' views in a non-egalitarian context and their impact on the level of bank debt were developed following this line of thought.

3 Hypothesis development

The social construct theory supports our interpretation of the relationship between the presence of women on boards (i.e., critical mass) and levels of debt by adopting the hypothesis that lenders have a different view of the board in terms of gender (i.e., supply-side). In their evaluation process, we argue that lenders will be influenced by any gender stereotype of the social context where they operate (egalitarian vs non-egalitarian). Accordingly, studies have suggested that social constructs regarding gender depict BoD members differently and that women may be at a disadvantage

due to not being naturally linked to behaviours identified as masculine (Chatman & Flynn, 2001; Eagly & Karau, 2002). These stereotypes influence lenders' views and standards of evaluation and potentially create barriers for firms trying to access credit. Accordingly, we built our two main hypotheses.

Figure 1 summarises our hypotheses on the presence of women on the board and the level of bank debt.

The first hypothesis considers the relationship between the presence of women on boards and the level of bank debt in stereotype-driven non-egalitarian contexts. Due to lender aversion, women face less favourable financing conditions, such as collateral requirements, co-signatory requirements, and higher interest rates on loans (Alesina et al., 2013; Riding & Swift, 1990). As mentioned, lenders in that context prefer to grant credit to males and prefer boards with a gender profile that reflects masculine traits such as competitiveness, aggressiveness, and risk-taking (Cowling et al., 2020; Jennings & Brush, 2013). Additionally, since women have been described as less specialised in finance (Sjöberg & Engelberg, 2009), this negatively affects the lender's view by triggering a "think manager - think male" stereotype. Thus, a stereotype-driven non-egalitarian context may constrain boards with a critical mass to relying on debt financing.

Accordingly, we expect that:

Hypothesis 1 There is a negative association between the presence of women on corporate boards and firms' debt financing when the context is non-egalitarian.

Early literature suggests that men tend to interpret risky situations as challenges that stimulate their desire for involvement and participation, while women tend to interpret them as threats and avoid them (Ahmed & Atif, 2021; Johnson & Powell, 1994). Literature states that women directors are likely to stay during a corporate crisis and are "cooler" in managing stressful times and difficulties inside the organisation (Buratti et al., 2017; Mano-Negrin & Sheaffer, 2004). Thus, considering the stereotype of the natural risk aversion of women, in cases of corporate crisis, lenders may prefer women over men for managing the processes with greater caution. Considering lenders' perspective in a non-egalitarian context, we argue that shared beliefs on women traits trigger the "think crisis - think female" stereotype in lenders when evaluating a firm facing a crisis condition. Thus, a stereotype-driven non-egalitarian context may favour boards with a critical mass to rely on debt financing during times of crisis.

Accordingly, we expect that:

Hypothesis 2 During a corporate crisis, the negative association between the presence of women on corporate boards and firms' debt financing is mitigated when the context is non-egalitarian.

To summarize, on the supply side, a negative moderating effect due to the non-egalitarian context is expected when the critical mass of at least three women on the board is reached. Conversely, a positive moderating effect due to the non-egalitarian

context is expected when critical mass is reached in a crisis scenario. All hypotheses are based on the idea that social construction induces a stereotypical view about women that affects lenders' decisions to grant credit access.

4 Empirical analysis

4.1 Sample and sources

The sample for the within-country analysis included 3514 Italian firms. The dataset we employed to characterise our sample, updated to the year 2018, was gathered through a process of merging data from the following databases: AIDABureau Van Dijk, Borsa Italiana, Espacenet, and Reprint.

The variables describing board, balance sheets, and financial data and the variable describing whether the firm is a family business were obtained from the AIDA Bureau Van Dijk database. Borsa Italiana is responsible for the organisation and management of the Italian stock exchange and collects information about listed firms. The Espacenet database provides information from approximately 90 million patent documents worldwide and provides the number of active patents each firm owns. Finally, Reprint provided a census of Italian firms that have made outward foreign direct investments and was employed to define the variables that describe internationalisation (Mariotti & Mutinelli, 2017).

As outliers can heavily influence the distribution of many statistics, our strategy was to set all outliers to a 1–99 percentile of the data (Greene, 2018). Firms were selected randomly from AIDA; therefore, each firm had the same probability of being selected. As an additional check, the sample's representativeness was evaluated to ensure that the characteristics of the selected sample were similar to those of the entire population of Italian firms. $\chi 2$ tests on the distribution of firms based on their sectors (2 digit, Nace) revealed a nonsignificant difference between the selected sample and the entire population.

4.2 Variables and models

Table 1 reports the sources and defines the dependent and independent variables.

4.2.1 Dependent variables

The dependent variable for all the hypotheses is the total amount of bank debt over total investments (*Level of Bank Debt)* (D'Amato, 2020; Datta et al., 2021; Zaid et al., 2020).

4.2.2 Independent gender variables

To measure the perceived presence of women, we employed a dummy variable equal to 1 if at least three women are active on the BoD and 0 otherwise (*Critical*

Table 1 Definition and source of variables

Variable	Definition	Source
Dependent variables:		
Level of Bank Debt	Total amount of bank debt on total investment	AIDA
Independent gender variables:		
Critical Mass	Dummy variable taking the value 1 if a firm presents at least three women in its board, and 0 otherwise	AIDA
Token	Dummy variable taking the value 1 if a firm is led by a woman or presents at least one woman in its board, and 0 otherwise	AIDA
Independent interaction variables:		
NE Context	Dummy variable taking the value 1 if the firm is located in a regions with EQI lower than Italian average, and 0 otherwise	AIDA
Crisis	Dummy equal to 1 if the ratio between cash flow and total assets is lower than a given threshold, and 0 otherwise	AIDA
Independent control variables:		
BoD	Total number of board members	AIDA
Size	Total sales (euro)	AIDA
Experience	Firm age (years)	AIDA
Family Business	Dummy equal to 1 either if a non-listed firm is majority owned by the family, or if no less than 20% of a listed firm is owned by the family, and 0 otherwise	AIDA
Profitability	Return on investments, ROI	AIDA
Value Added	Value added per employee (euro/employee)	AIDA
Bonds	Dummy equal to 1 if the firm emitted bonds; and 0 otherwise	AIDA
Tangibility	Tangible asset scaled by total asset	AIDA
Innovation	Number of active patents held by the firm	Espacenet
Internationalisation	Stock of outward foreign direct investments	Reprint
Listed	Dummy equal to 1 if the firm is listed, and 0 otherwise	Borsa italiana
Sector	Dummy variable equal to 1 if the firm belongs to a specific sector (Nace 2 digit), and 0 otherwise	AIDA

Mass) (Joecks et al., 2013; Konrad et al., 2008). We also labelled firms with a small board (i.e., with two or three members) of at least two women as critical mass; we assumed that critical mass is reached if the majority of the board is composed of women. A variable indicating the presence of only one woman in the BoD has been added (*Token*).

4.2.3 Independent interaction variables

The inclusion of women in society can occur mainly through formal institutions (Fuentelsaz et al., 2019). Therefore, it is considered that the quality of institutions can guarantee this equality (Sinanai et al., 2008; Esarey & Chirillo, 2013). Based on these premises, we use the European Quality of Government Index (EQI), the only available measure of quality context at the regional level in the European Union (Charron et al., 2019; Peiró-Palomino et al., 2020). The EQI results from survey data on regional level governance within the EU. EQI aims to provide researchers and policymakers with a tool to better understand how institutions' quality vary within regions. To measure the independent variable for Hypothesis 1, the non-egalitarian context, we employed the variable *NE Context,* a dummy variable taking the value 1 if the firm is located in a context with an EQI lower than the Italian average 0 otherwise.

According to Hypothesis 2, to detect a firm crisis, we followed the guidelines provided by the Italian National Council of Certified Accountants (CNDCEC, 2019). Among the available variables, the "liquid asset return index," measured by the ratio between cash flow and total assets, is the most relevant for our purposes. The firm crisis is then measured with a dummy variable equal to 1 when the index is lower than a given threshold (*Crisis*). Thresholds are specific by sector (ATECO ISTAT 2007) and are determined according to the median of the subset of insolvent companies (CNDCEC, 2019).

4.2.4 Control variables

Following previous research, we controlled for several firm-specific characteristics as further control variables. The effects of the presence of women on the BoD depend on the total number of board members (*BoD*). Firm size and firm age are proxies for accumulated knowledge and managerial experience; they usually display a positive correlation with the ability to obtain bank debt and are thus included as control variables. *Size* was measured as the total sales, and *Experience* as the number of years since the firm was founded (Hölzl, 2014).

We further controlled for the effect of family ownership since the literature demonstrates that family ownership exerts influence over the financial structure by constraining the level of bank debt (González et al., 2011; Gottardo & Moisello, 2014). The variable *Family Business* is defined as a binary variable equal to one if either a non-listed firm is the majority-owned by the family or no less than 20% of a listed firm is owned by the family and zero otherwise (Anderson & Reeb, 2003; Lee & Tan, 2001).

We also controlled for profitability measured as the return on investment (*Profitability*) and the value added per employee (*Value Added*), which informs us about the complexity of the production system adopted inside the firm. The literature suggests a positive relationship between value added, profitability, and level of bank debt (Hanel & St-Pierre, 2002).

Additional control variables included *Bonds,* a dummy equal to one if the firm has bonds. Bond emissions are currently a viable option only for bigger firms and represent a potential alternative to bank debt. Firms may also affect lenders' views by issuing bonds, which can be negotiated on the market, and lenders will use their market rating in evaluating credit requests. The variable *Tangibility*, measured by tangible assets scaled by total assets, is included as it is a critical driver due to the role of collaterals (Degryse et al., 2021; Tran, 2021). The level of a firm's innovation was measured through the firm's R&D output, which is proxied by the number of active patents (*Innovation*) (Katila, 2000), while the level of internationalisation was taken as the stock of the total foreign direct investments made by the parent company in foreign markets (*Internationalisation*) (Bannò & Trento, 2016; Kafouros et al., 2008). Both measures were included, as they imply a higher level of financing. Our study also controlled for listed firms because Italy introduced gender quotas to all publicly listed companies in 2011; consequently, there is almost certainly a token woman in these companies, and there is a higher probability of finding critical mass. The variable *Listed* is a dummy, and it is equal to 1 if the firm is listed and 0 otherwise. Finally, industry dummies (*Sector*) were included as further controls because of the significant impact of the industry on the financial structure, and specifically on the debt level (Harris & Raviv, 1991; Villalonga & Amit, 2006). Some researchers argue that differences in the registration of financial measures are not gender-based issues but depend on the type of sector and activity. Women-run businesses often operate in the services sector, a less dynamic context with lower revenues, limited growth prospects, and lower employment rates (Singh & Vinnicombe, 2004). Dummies were measured based on two industry digits taken from the NACE classification.

Three econometric models were developed to test the hypotheses. In addition to the model containing only the control variables (Baseline Model), the two conceptual models were estimated where *Critical Mass* moderates the variables proxying *NE Context* (Model 1) and *Crisis* (Model 2). The models test the hypothesis by assessing the separate impact of *Critical Mass* as a dummy variable and the moderating term:

Baseline Model:

Level of Bank debt = f(Token; Critical Mass; Control Variables)

Model 1:

Level of Bank debt = f(Token; Critical Mass; Critical Mass × NE Context; Control Variables)

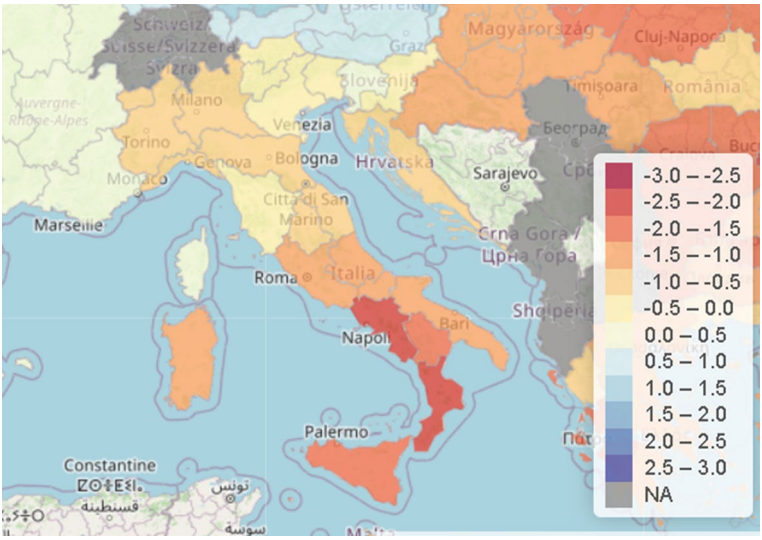

Fig. 2 Within-country EQI in Italy. *Source* Charron et al. (2021)

Model 2:

Level of Bank debt = f(Token; Critical Mass; Critical Mass × Crisis × NE Context; Control Variables)

An Ordinary Least Squares (OLS) regression analysis was performed to test the hypotheses, given the continuous nature of the dependent variable (Greene, 2018).

4.2.5 Descriptive statistics

Figure 2 frames the value of the EQI for our within-country analysis. According to many recent studies, the index identifies Southern Italy as the worst in Europe in terms of the quality context (Mannarini et al., 2019; Villano & Passini, 2018). Figure 2 depicts a perfect distinction between the North and South of Italy according to the index's performance. All the regions in the South show an EQI lower than 1.5, while all the regions in the North show an index higher than 1.

The culture of many regions still depicts women in the role of caring, especially in the South (Alesina et al., 2013). Data about women employment confirm this difference. The situation is even more complicated within the South, where the rate of women employment is more than 30 points away from the EU average: 62.4% for women between the ages of 15 and 64 (Carloni, 2021).

Only 43.9% of firms register at least one woman among the board members (as a token), and only 355 (8.7%) have reached critical mass. Almost 18% of firms were located in a patriarchal and male-oriented context, with a small difference between the subsample with and without critical mass (12.8% and 18.7%, respectively). Descriptive statistics for the whole sample are reported in Panel A of Table 2.

Table 2 Descriptive statistics

Panel a: Descriptive statistics on the whole sample

Variable (3514 obs)	Mean	Std. Dev	Min	Max
Level of Bank Debt	0.235	0.204	0.000	0.854
Critical Mass	0.087	0.281	0.000	1.000
Token	0.439	0.496	0.000	1.000
NE Context	0.179	0.383	0.000	1.000
Crisis	0.143	0.351	0.000	1.000
BoD	4.034	3.438	0.000	34.000
Size	86,570	787,744	0.000	29,000,000
Experience	34.220	21.951	3.000	190.000
Family Business	0.325	0.469	0.000	1.000
Profitability	6.866	9.233	− 29.640	29.970
Value Added	20,632	188,890	− 52,306	9,222,296
Bonds	0.059	0.237	0.000	1.000
Tangibility	0.612	0.342	0.000	1.000
Innovation	23.541	285.318	0.000	8,597.000
Internationalisation	4.939	23.043	0.000	994.000
Listed	0.042	0.200	0.000	1.000

Panel b: Descriptive statistics on subsamples

Variable	Subsample (3,159 obs) Critical Mass = 0				Subsample (355 obs) Critical Mass = 1			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Level of Bank Debt	0.223	0.212	0.000	0.854	0.217	0.204	0.000	0.854
Critical Mass	0.000	0.000	0.000	0.000	1.000	0.000	1.000	1.000
Token	0.345	0.475	0.000	1.000	1.000	0.000	0.000	1.000
NE Context	0.187	0.390	0.000	1.000	0.128	0.335	0.000	1.000
Crisis	0.182	0.386	0.000	1.000	0.156	0.363	0.000	1.000
BOD	3.051	2.619	0.000	34.000	7.531	5.892	1.000	42.000
Size	50,162	513,198	0	28,600,000	256,318	1,578,438	0	29,000,000
Experience	30.876	20.162	3.000	190.000	38.921	26.825	3.000	160.000
Family Business	0.280	0.449	0.000	1.000	0.388	0.488	0.000	1.000
Profitability	6.794	9.567	− 29.590	29.970	4.665	8.956	− 29.640	29.060
Value Added	12,538	145,480	− 73,366	9,222,296	70,732	464,134	− 52,306	7,880,994
Bonds	0.036	0.186	0.000	1.000	0.112	0.316	0.000	1.000
Tangibility	0.621	0.346	0.000	1.000	0.536	0.364	0.000	1.000

Table 2 (continued)

Panel b: Descriptive statistics on subsamples

Variable	Subsample (3,159 obs) Critical Mass = 0				Subsample (355 obs) Critical Mass = 1			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Innovation	14.775	213.847	0.000	8,597.000	50.627	422.421	0.000	8,088.000
Internationalisation	2.912	10.670	0.000	192.000	13.361	57.562	0.000	994.000
Listed	0.017	0.131	0.000	1.000	0.199	0.400	0.000	1.000

Descriptive statistics for the two subsamples with and without critical mass are reported in Panel B of Table 2.

The average level of bank debt for the whole sample is 0.23. The firms with a critical mass are bigger than the subsample without critical mass. Additionally, only 4.2% of the sample firms were listed, and only 5.9% emitted bonds. In terms of innovation and internationalisation, firms with critical mass have a higher average number of patents and a higher number of foreign direct investments. Firms with critical mass have a slightly higher average experience and a slightly lower average profitability value. One out of three of the sample firms is a family business, with only a small difference in the subsamples.

The correlation matrix (Table 3) shows acceptable correlation indexes (Greene, 2018).

4.3 Empirical results

Table 4 reports the regression results from all models, and Fig. 2 shows interaction graphs. The models differ with regard to the statistical significance of the variables connected to gender.

In all models, the variable that detects only women presence (*Token*) is never statistically significant in any model. This indicates that women presence alone is not sufficient to determine a state; what rather eventually determines the effect is the *Critical Mass*. Indeed, *Critical Mass* captures the external relevance of the board composition. As expected, in all models, when not interacting with the context, the critical mass had a non-significant effect on the level of bank debt. *Crisis* alone has a negative effect in all models, at least at $p < 0.10$. On the other hand, *NE Context* alone has a negative effect only in the Baseline model (significant at $p < 0.05$). Its moderating effect becomes clear when it is considered in interactions with other variables. Model 1 reports the interaction effects of *Critical Mass* and *NE Context*. Regression results report a negative and significant coefficient (significant at $p < 0.05$), providing strong support for Hypothesis 1. Thus, the *NE Context* is related to a significantly lower level of bank debt in firms where critical mass is present and

Table 3 Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	*Level of Bank Debt*	1															
2	*Critical Mass*	− 0.022	1														
3	*Token*	− 0.011	0.325	1													
4	*NE Context*	− 0.027	− 0.038	− 0.133	1												
5	*Crisis*	− 0.024	− 0.045	− 0.028	0.053	1											
6	*BOD*	− 0.026	0.446	0.347	− 0.196	− 0.050	1										
7	*Size*	− 0.051	0.088	0.050	0.004	0.020	0.194	1									
8	*Experience*	− 0.045	0.144	0.111	− 0.165	− 0.003	0.335	0.154	1								
9	*Family Business*	0.066	0.100	0.127	− 0.181	− 0.014	0.164	0.025	0.271	1							
10	*Profitability*	− 0.098	− 0.051	− 0.008	− 0.015	− 0.333	− 0.073	− 0.027	− 0.099	− 0.031	1						
11	*Value Added*	− 0.049	0.077	0.029	0.000	− 0.008	0.153	0.712	0.152	0.015	− 0.009	1					
12	*Bonds*	0.018	0.124	0.064	− 0.048	− 0.007	0.207	0.121	0.155	0.136	− 0.061	0.147	1				
13	*Tangibility*	0.103	− 0.095	− 0.037	0.091	− 0.123	− 0.229	− 0.086	− 0.124	− 0.211	0.107	− 0.084	− 0.121	1			
14	*Innovation*	− 0.048	0.049	0.044	− 0.032	0.023	0.129	0.422	0.137	0.036	− 0.040	0.282	0.067	− 0.062	1		
15	*Internationalisation*	− 0.045	0.176	0.083	− 0.032	0.013	0.277	0.348	0.246	0.116	− 0.081	0.253	0.192	− 0.218	0.175	1	
16	*Listed*	− 0.024	0.335	0.139	− 0.038	0.020	0.428	0.168	0.265	0.116	− 0.087	0.196	0.194	− 0.236	0.091	0.294	1

Table 4 Regression results

	Level of bank debt		
	Baseline model	Model 1	Model 2
Critical mass × NE Context		− 0.073**	− 0.097*
		(0.036)	(0.038)
Critical mass × Crisis			− 0.021
			(0.044)
Crisis × NE Context			− 0.026
			(0.024)
Critical mass × Crisis × NE Context			0.222*
			(0.117)
Critical Mass	− 0.102	0.000	0.002
	(0.014)	(0.015)	(0.015)
Token	− 0.006	− 0.006	− 0.006
	(0.007)	(0.007)	(0.007)
NE Context	− 0.179**	− 0.013	− 0.009
	(0.009)	(0.010)	(0.011)
Crisis	− 0.026*	− 0.027***	− 0.022*
	(0.010)	(0.010)	(0.012)
BoD	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Size	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Experience	− 0.001***	− 0.001***	− 0.001***
	(0.000)	(0.000)	(0.000)
Family Business	0.042***	0.042***	0.042***
	(0.008)	(0.008)	(0.008)
Profitability	− 0.003***	− 0.003***	− 0.003***
	(0.000)	(0.000)	(0.000)
Value Added	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Bonds	0.031*	0.032**	0.032**
	(0.015)	(0.015)	(0.015)
Tangibility	0.050***	0.050***	0.050***
	(0.011)	(0.011)	(0.011)
Innovation	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Internationalisation	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Listed	0.022	0.022	0.020
	(0.019)	(0.020)	(0.020)
NACE	yes	yes	yes
Constant	0.234***	0.233***	0.232***
	(0.063)	(0.063)	(0.063)

Table 4 (continued)

	Level of bank debt		
	Baseline model	Model 1	Model 2
Observations	3,514	3,514	3,514
Adjusted R2	0.0726	0.073	0.074
F	4.27***	4.280***	4.180***
	df = (84, 3429)	df = (85, 3428)	df = (88, 3425)

externally perceived. This effect is also evident in Fig. 3, Model 1, where *NE Context* (NEC) alone has no effect on the dependent variable, but there is a clear negative effect when NEC interacts with *Critical Mass* (CM). The same result is reported in Model 2, and the coefficient of the interaction term is negative and significant at $p < 0.10$. Our results suggest that due to the stereotyped view of lenders (i.e., supply-side), in a non-egalitarian context, there is a negative association between women on corporate boards and firms' level of debt.

Model 2 reports the interaction effects of *Critical Mass*, *Crisis,* and *NE Context*. Regression results report a positive and significant coefficient (significant at $p < 0.10$), providing support for Hypothesis 2. Thus, the non-egalitarian context is related to a significantly higher level of bank debt for firms in crisis where critical mass is present. This effect is evident in Fig. 3, Model 2. The line has a slightly negative slope since the interaction effect of *Critical Mass*, *Crisis,* and *NE Context* only partially compensates for the negative effect of the two-way interactions *Critical Mass* × *Crisis* and *Critical Mass* × *NE Context*. Due to the stereotyped view of lenders (i.e., supply-side), during a corporate crisis, the negative association between women on corporate boards and firms' debt financing is mitigated when the context is non-egalitarian.

The control variables also yield interesting results. *Experience* is negative and significant in all models, with at least $p < 0.01$. Firm size, both in terms of sales and number of members on the BoD, measured through the variables *Size* and *BoD*, does not impact any models. *Family business* has a positive and significant impact in all models (at $p < 0.01$). The variable measuring firm profitability has a negative impact in all models (at $p < 0.01$), while the value added is not significantly different from zero in any model. The presence of bonds positively impacts the level of bank debt (at least at $p < 0.10$ in all models). *Tangibility* is also positive and significantly different from zero at $p < 0.01$ in all models. *Innovation* and *Internationalisation* have no impact in any model. The same is true for listed firms. Some of the coefficients associated with the industry dummies are significantly different from zero in all models.

4.4 Robustness check

In order to check whether taking the two variables, *Token* and *Critical Mass,* together in the same regression has the potential problem of inducing multicollinearity and

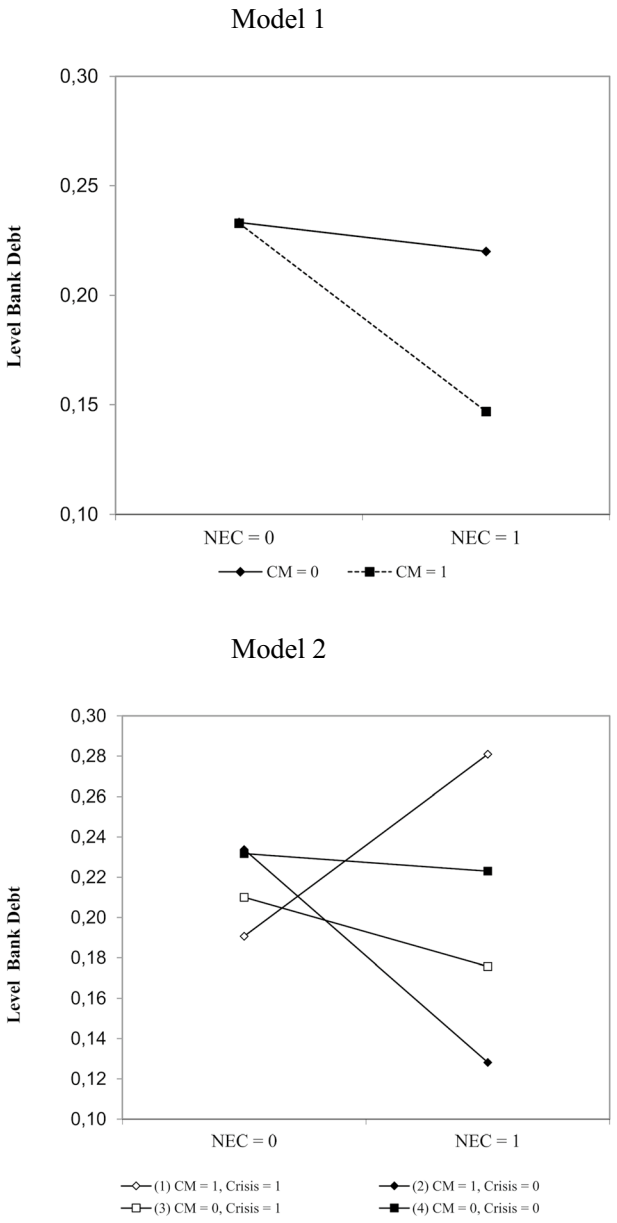

Fig. 3 Interaction graphs

biasing of the results, we made the estimates taking the variable *Token* out of the regressions. The results were the same when we took *Token* out.

As we do not know precisely when women joined the firm´s boards, we made robustness checks on a subsample by trying different time lags on the dependent

variable (i.e., 2019 and 2020). We found that the results were substantially the same. Furthermore, we randomly checked the presence of women on the board in 2015, 2016, and 2017, and we found that the women presence was stable during these years.

As a last robustness test, and following Amore et al. (2014), we also estimated the regression by employing a dummy variable equal to one when the firm was located in the South of Italy (otherwise, the variable was zero) as an alternative measure of the non-egalitarian context. Again, the results were the same.[6]

5 Discussion

Investigating if and how the existence of a gender-based prejudice on the supply side creates an obstacle to credit access is a fundamental issue in the management and governance literature since any dysfunction of the lending channel may negatively affect a firm's growth and survival, their employees, and ultimately the whole economy (de Andrés et al., 2020).

Lenders are influenced by the social context in which they operate. We claim that gender social construction in egalitarian vs non-egalitarian contexts may reduce a firm's access to credit. In this paper, we have made several contributions.

First, we advance the social construction theory through an empirical within-country analysis to better understand the social construction that may constrain or shape the phenomenon under investigation. In this sense, we contribute to the literature that analyses the relationship between gender discrimination and access to credit. To the best of our knowledge, there is no empirical evidence regarding this aspect, but we add to our understanding by adopting the theoretical lens of social construction theory. Lenders' stereotyped views in a non-egalitarian context can explain the differences in firms' access to external financial resources. In non-egalitarian contexts, as the presence of women on the board reaches the critical mass, there is a lower level of bank debt. Consequently, this research contributes to the social construction theory (Berger & Luckman, 1966) by refining the importance of the social and cultural context for lenders' views on the presence of women on the board. This aspect is verified by considering both the number of women on the board (critical mass) and cases of corporate crisis.

Specifically, in a corporate crisis scenario, as a stereotyped effect, the presence of women on boards is viewed positively by the lenders, thus facilitating the women's access to credit.

Second, we add to the critical mass literature by identifying the external relevance of critical mass. The empirical analysis shows that the mere presence of a woman (i.e., tokenism) on the BoD does not have a statistically significant impact. This is because lenders do not consider their presence to be relevant. According to the lender's stereotyped view, if women represent a tiny minority on the BoD, they are externally viewed simply as symbols. Conversely, if at least three women on the

[6] All the models are available upon request.

BoD (i.e., critical mass), they become externally visible and relevant to lenders. The specific context will consequently change the lender's view toward firms according to the external relevance of critical mass.

To the best of our knowledge, this is the first study to explicitly address the external relevance of the critical mass of a board of directors. In the literature, the focus is generally on the composition of individual corporate boards, reflected through multiple theoretical lenses and empirical descriptions (Kirsch, 2018; Terjesen et al., 2009), and previous studies have always considered the internal relevance of the critical mass (see, e.g., Moreno-Gomez et al., 2018; Labelle et al., 2015; Öberg, 2021; Johnson et al., 2013; Torchia et al., 2011).

Third, gender studies have historically been rooted in "the West," with the field basically "dominated by the work of US-American and Western European scholars, mono culturally infused and biased" (Klarsfeld et al., 2019). Our results suggest considering other national contexts: cultural differences need to be deeply investigated. Other studies should be conducted within and across different nations to grasp the magnitude of the external effect of the presence of women on the board.

Therefore, this study identifies implications for practitioners and managers, and our findings are relevant to the ongoing debate over the governance of private unlisted and small and medium companies. This typology of firms is now increasingly affected by adopting "codes of good governance," with detailed suggestions on how they should be governed to secure their survival and long-term success (ecoDa, 2010; Aguilera & Cuervo-Cazurro, 2009). We suggest that similar codes could be used on the one hand to promote women's inclusion on boards of directors and, on the other, to help lenders move past their stereotypical views.

Many policymakers in governmental and international organisations argue that small firms have inadequate access to external finance due to market imperfections. We add that, although traditionally ignored by policy makers, the role of women on boards is another key issue that can limit access to credit (de Andrés et al., 2020).

Sustainable Development Goal 5 of the United Nations states that an effort must be made toward the real inclusion of women, educate the population, and take social actions that move toward an egalitarian society free of stereotypes. Notwithstanding capabilities and competencies being gender-neutral, they have been gender-stereotyped, and it is now time for that to change. These results suggest that a further variable to consider in public policy design is the specific kind of context (i.e., egalitarian or non-egalitarian) in which policies have to be introduced by controlling for the stereotypes that may reduce policies' efficacy. Specifically, suppose target firms, which are needed to foster a sound and steady development path, have a critical mass of women on the board and are located in a non-egalitarian context. In that case, they may not receive sufficient external financing because of lenders' aversion. Moreover, credit exclusion may signal the market, impacting access to other financing instruments and even to commercial credit.

Public policies aiming to foster development will be differently effective according to context to express this problem in different terms. Any public policy that fosters local economic growth by supporting women entrepreneurship should take the context into account to properly address any gender-based stereotyping. Inadequate access to external finance may affect economic growth and welfare: firms repeatedly

point to a lack of external financing as a major obstacle to their investment. This study shows that a firm with women on the board may face a further obstacle if located in a non-egalitarian context. Limitation of access to credit may be detrimental for underdeveloped areas with fragmented industrial systems and lower income levels. It may hinder public policies' effectiveness to support their development and catching up. Accurate identification of target firms needing support is paramount to measure policy effectiveness properly and is even more challenging now, given that the scale of currently ongoing policies is unprecedented. In particular, we believe that in the same nation, the backwardness of one part of the economy leads to a reduction in national wealth and reduces the horizon for development. Instead, if that backward territory recovered the path of growth and approached the performance of the other parts, Italy would have the occasion to have a leading role in the world economy. Financial exclusion deserves policy action. Public policies are desirable not only for encouraging the presence of women on the board but also for aiming to overcome non-egalitarian culture, thus benefiting not only companies but the whole community.

The influence of stereotypes on lender's views could be mitigated by a strong presence of women in the lending channel. However, empirical evidence suggests that gender disparity is still very present in banks, especially if one looks at them from the upper positions.[7]

6 Conclusion

Ideally, all cultures aim for egalitarianism, described as the belief that all individuals are of equal worth and should be considered equally in society (Schwartz, 2001; Siegel et al., 2011), but evidence shows that this is not always the case. The research on the effect of managers' traits on strategic decisions has significantly contributed to the stratification of stereotyped views of women that now influence how women are viewed. We have advanced the idea that this literature has nurtured the generation of a stereotyped view of women's attitudes compared to men attitudes. These stereotypes characterise the non-egalitarian context, influence lenders' views, and potentially create barriers for women trying to access credit (Chatman & Flynn, 2001; Eagly & Karau, 2002). Scholars have argued that socially constructed stereotypes about gender and management limit women's ability to accrue financial capital because loan officers apply different evaluation standards (Gatewood et al., 2003; Marlow & Patton, 2005). Furthermore, the literature suggests that glaring and persistent differences between men and women in power positions may be associated with gender characterisation (D'Allura et al., 2021; Carter et al., 2007; Greer

[7] In Italy, although progress has been made in the last 20 years, and 48% of the nearly 300,000 employees in the credit sector are women, only one in six executives are women. If we look at management positions, only a third are women, while in the professional areas, almost two out of three workers are the least represented gender (FirstCisl, 2021). This data reinforces our concerns about stereotypes in the lender's view of women's presence on the board in Italy.

& Green, 2003; Marlow, 2016). Our results add to this idea since lender's gender-based stereotypes, present in non-egalitarian contexts, affect firms' financial structures depending on the significant presence of women on boards (i.e., critical mass). This evidence changes the perspective on the relationship between the presence of women on the board and firms' strategic choices, development, and growth.

This study is not devoid of limitations. First, a general limitation in the quantitative research design could be addressed with a mixed-method approach. A possible further research development could include triangulation of data collected via a survey with database sources. The generalisability of quantitative analyses and the deeper understanding afforded by qualitative analyses can be combined to achieve a deeper insight into the supply side (Creswell & Plano Clark, 2018). The strengths of the quantitative and qualitative approaches can be combined, and the limitations overcome (Creswell, 2014).

A second limitation is observation time. If a firm already has a well-established financial strategy before the arrival of a woman director, empirical analysis based on indirect data may be unable to document any association between woman presence on the board and the financial structure. Future research could consider the period women have been on the board. Also, the roles the women hold and their power could also be investigated (e.g., CEO).

Social construction theory teaches us that it is impossible to gain freedom from biases by flipping completely from one side to the other, rejecting the 'masculine', and adopting only the 'feminine' trait. In this paper, we frame stereotypes as a social construction heavily dependent on the context in which a firm operates. Unfortunately, these stereotypes induce a prejudice against women on boards, which potentially creates barriers to a firm's access to credit. We hope that our results inspire future efforts in this direction and a new era where competence will be free from stereotypes.

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