



A Meta-Analysis of the Impact of Entrepreneurs' Gender on their Access to Bank Finance

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Abstract

This meta-analysis of 31 studies over 20 years advances our understanding of the gender gap in entrepreneurial bank finance. Findings from previous research on the relationship between entrepreneurs' gender and bank financing are mixed, which suggests the need to pay particular attention to entrepreneurs' social context. In this study, we develop a model of how social gender norms explain variation in women entrepreneurs' (vis-à-vis men entrepreneurs') access to bank finance. Specifically, we theorize how women's formal (their nations' political ideologies) and informal (women's empowerment) social standing within their societies influence gender discrimination in entrepreneurial bank financing. Consistent with most previous studies, our baseline results show that women entrepreneurs' business loan applications are rejected to a greater extent than men entrepreneurs' loan applications. Women entrepreneurs also pay higher interest rates on loans than men entrepreneurs. Further, in societies dominated by a conservative (rather than a liberal) political ideology, the positive relationship between women entrepreneurs and loan interest rates is more positive. Interestingly, gender discrimination in loan rejection and interest rates is magnified in societies with greater women's empowerment. Taking a social gender-norm perspective, our analysis establishes a gender gap in entrepreneurial bank finance, and we outline an agenda for further research.

Keywords Gender bias · Entrepreneurial bank finance · Meta-analysis

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Introduction

Although commercial bankers can provide capital to fund the ongoing operations and/or growth of a business, their evaluations of the entrepreneurs applying for these loans can marginalize women entrepreneurs and disadvantage their businesses (e.g., Malmström & Wincent, 2018; Mina et al., 2021). Indeed, commercial bankers' gender bias in business loan decisions is one of the main reasons women entrepreneurs (vis-à-vis men entrepreneurs) are denied bank loans (e.g., Cowling et al., 2020; Thébaud & Sharkey, 2016). When women do obtain a business loan, those loans are typically smaller (Coleman & Robb, 2009), have higher interest rates (Mascia & Rossi, 2017), and require more collateral (Bellucci et al., 2010). This gender imbalance restricts the economic potential of women-led ventures (Guzman & Kacperczyk, 2019) and the economy (Welsh et al., 2016).

However, findings on the relationship between entrepreneurs' gender and bank financing are inconsistent and point to the importance of social context. For example, despite numerous studies providing evidence of commercial bankers' gender discrimination, some studies have reported

non-significant findings (e.g., Moro et al., 2017; Orser et al., 2006; Treichel & Scott, 2006). The importance of context is highlighted by evidence showing that the nature of the relationship between women entrepreneurs and bank finance depends on the overall formal and informal social standing of women in a society (Leitch et al., 2018; Verheul & Thurik, 2001). We develop a model focusing on a society's gender norms upon which entrepreneurs and bankers interact. Specifically, we focus on the formal standing of women (reflected in nations' political ideologies [Conway et al., 2020; Hoyt & Burnette, 2013]) and the informal standing of women (reflected in women's empowerment within their societies [Bowles & Flynn, 2010; Kossek et al., 2017]). These contexts likely shape and reflect a decision-maker's attitudes, expectations, and beliefs concerning women's social, economic, and political status. Therefore, we ask whether nations' political ideologies and women's empowerment in their societies explain variation in women entrepreneurs' (vis-à-vis men entrepreneurs') bank financing.¹

We investigate these research questions by building on role congruity theory (e.g., Anglin et al., 2022; Eagly & Karau, 2002; Yang et al., 2020), social dominance theory (e.g., Brush et al., 2019; Pratto et al., 1998; Sidanius et al., 2004), and the management literature on a nations' political ideologies (e.g., Baruffaldi et al., 2016; Crossland & Hambrick, 2011) to theorize how and why entrepreneurs' gender influences two critical bank-financing outcomes—loan rejection and loan interest rate. We test our model using a meta-analysis of 31 entrepreneurship studies of bank financing over 20 years. Consistent with most previous studies, we find a positive relationship between the female gender and higher business loan rejection and interest rates. However, we also find that with a conservative (rather than a liberal) political ideology, women entrepreneurs pay higher business loan interest rates than men. At the same time, a nation's political ideology has no significant effect on loan rejection. In addition, we find that gender discrimination in loan rejection and loan interest rates is magnified with greater women's empowerment in a society. In supplementary analyses, we explore the possible interplay between political ideology and women's empowerment.

Our model and findings provide three primary contributions to the entrepreneurial finance literature. First, although previous research has mostly found that women entrepreneurs (vis-à-vis men entrepreneurs) find it more difficult to

access affordable funding in general (for a review, see Serwaah & Shneor, 2021) and from commercial banks specifically (Cowling et al., 2020; Eddleston et al., 2016; Muravyev et al., 2009), some studies raise questions about the existence of such gender bias in entrepreneurial finance (Moro et al., 2017; Orser et al., 2006; Treichel & Scott, 2006). Our meta-analysis provides evidence that (1) women entrepreneurs' business loan applications are rejected more often than men entrepreneurs' applications; (2) women entrepreneurs' business loans are more costly (i.e., have higher interest rates) than men entrepreneurs' business loans; and (3) there is considerable variance in these relationships, indicating the need to consider moderators.

Second, we heed the calls to contextualize women's entrepreneurship (Brush et al., 2019; Ng et al., 2022; Tlaiss & McAdam, 2021; Welter, 2011) and to consider the importance of nations' formal political ideologies (Brush et al., 2019; Bastian & Zali, 2016) by providing insights into how variation in social contexts influences the conditions for women to finance their entrepreneurial businesses. We find that in societies dominated by a conservative (rather than a liberal) political ideology, women entrepreneurs receive poorer credit terms compared to men entrepreneurs.

Finally, research has suggested that women's empowerment in a society can help break down social gender norms to promote gender equality (Desai et al., 2022; Duflo, 2012). We theorize and find evidence for a different perspective: women's empowerment threatens male dominance in resource distribution. Specifically, we offer insights into how the banking establishment responds to women's empowerment. We theorize that rather than embracing the change, these establishments appraise this change as a threat, and we find that women's empowerment increases the bias against women in entrepreneurial bank finance. This explanation is not a prescription but suggests that progress in one sphere (i.e., women's empowerment) can lead to backlash in another (i.e., women entrepreneurs' disadvantage in bank financing). We extend previous research by recognizing the contexts of political ideology and women's empowerment (as two macro-level contextual variables) and exploring three-way interactions in supplementary analyses.

Theoretical Framework

Women, the Entrepreneurial Role, and Bank Finance

Role congruity theory proposes that perceived incongruity between being a woman and the role being performed (e.g., leadership) leads individuals to judge women and their behavior less favorably than men and their behavior (Eagly & Karau, 2002). The strength of social norms regarding gender roles aligns with expectations that women and

¹ While women's empowerment comprises multiple domains (e.g., Desai et al., 2022; Duncanson, 2019), we focus on women in the highest leadership positions who challenge the status quo (Duncanson, 2019) given their positions are powerful, prestigious, and visible. Thus, women's empowerment is not only about generating their own income but also about having a voice and power in society, which collectively enables the mobilization to challenge the status quo.

men possess different attributes and behave differently (e.g., Diekmann & Eagly, 2000). For example, societies typically ascribe *communal attributes* to women, such as being caring, emotional, helpful, nurturing, and gentle. In contrast, societies usually ascribe *agentic attributes* to men, such as being decisive, assertive, self-confident, ambitious, dominant, and independent (Eagly & Karau, 2002: p. 574).

Furthermore, certain occupations are associated with these stereotypical attributes because they are perceived to be related to success and failure in those occupations (Blessie & Supriya, 2018). Occupations associated with femininity—aligned with women's stereotypical communal attributes—include teaching (Carrington, 2002), nursing (Coleman, 2008), and librarianship (Simpson, 2005). Occupations associated with masculinity—aligned with men's stereotypical agency attributes—include policing (Kurtz & Upton, 2018), science (Banchefsky et al., 2016), and medicine (Meeussen et al., 2021). Perceptions stemming from these role expectations can constrain women entrepreneurs (Eagly & Karau, 2002; Ridgeway, 2014). For instance, Welter and Smallbone (2008) found that the greater the extent to which a career as an entrepreneur is marked as a masculine pursuit in a society, the more restrictions there are on women entrepreneurs' activities.

Women entrepreneurs are perceived as incongruent with the entrepreneur role when the social gender norms underpin the masculine attributes of traditional entrepreneurship (as opposed to social entrepreneurship [Anglin et al., 2022]). This incongruity leads to women entrepreneurs being assessed more negatively than their male counterparts (Yang et al., 2020). Indeed, many societies continue to perceive home- and family-related work as consistent with the woman's role (Jennings & McDougald, 2007), which implicitly marks entrepreneurship as a less expected and ill-fitting career choice for women, thereby giving rise to expectations that women will be less successful as entrepreneurs than men (Pfau-Effinger, 2004).² These social norms for gender roles are rooted in a macro-level context, which provides normative expectations and scripts that guide bankers' decision-making on how to evaluate women as entrepreneurs (Gupta et al., 2020; Ridgeway, 2011) and legitimize bankers' behaviors in lending (Thébaud & Sharkey, 2016; Zhao & Wry, 2016).

Despite bankers' decision process involving the collection of basic standardized information, such as information on individuals' income levels and collateral, assessing entrepreneurs' ability to repay business loans relies heavily on predictions of future events that build on trusting entrepreneurs' ability to deliver on forecasts. In such assessments,

the mismatch between being a woman and the masculine-marked field of entrepreneurship (Gupta et al., 2009) contributes to the likelihood that bankers will assess women as less qualified, competent, and/or knowledgeable and thus less likely to achieve entrepreneurial success. As a result, bankers tend to assess women entrepreneurs (vis-à-vis men entrepreneurs) as riskier to finance (Eddleston et al., 2016; Marlow & McAdam, 2013), leading to women being denied bank financing (Malmström & Wincent, 2018; Orhan, 2001) or being charged higher interest rates (vis-à-vis men) (e.g., Carter et al., 2007; Wu & Chua, 2012) even when their ventures are comparable to those led by men (Marlow & McAdam, 2013). Therefore, we propose the following:

Hypothesis 1a Women entrepreneurs' business loan applications are rejected to a greater extent than men entrepreneurs' business loan applications.

Hypothesis 1b Women entrepreneurs' business loans are charged higher interest rates than men entrepreneurs' business loans.

Entrepreneurship, Bank Finance, and Political Ideology

The extent to which people perceive existing social arrangements as fair, legitimate, and justified (Jost & Banaji, 1994) is associated with rationalizing the status quo (Kay et al., 2002). Such underlying ideological values can help change or stabilize gender-biased behavior, including banks' lending (Pratto et al., 1998). The dominant political ideology of a society underpins the accepted social gender norms, which correspond to the gender-based division of occupational roles and include prescriptions and proscriptions for the roles in which men and women are and are not socially accepted (Jost & Burgess, 2000; Prentice & Carranza, 2002). Political ideologies are typically categorized as liberal or conservative, and those embedded in a more conservative political context are more likely to allow hierarchical inequalities and oppose non-traditional innovations (Conway et al., 2020)—behavior that coincides with the formal social standing of women in a society. Therefore, the dominant political ideology of a society will likely influence various social judgments (Jost et al., 2003), including gender stereotyping (Plaks et al., 2001).

A liberal political ideology encourages challenging existing hierarchies and social norms, promoting progressive change and greater gender equality (Carnahan & Greenwood, 2018; Jost et al., 2003), and breaking the boundaries of gender-role norms (Davis & Greenstein, 2009) to consider both women and men in “breadwinning” and domestic roles (Eagly & Karau, 2002; Ridgeway, 2011). A liberal ideology can justify using managerial

² Although social gender-role norms may change, they appear relatively stable and only change slowly (Zhao & Wry, 2016).

power to right past wrongs to create greater gender equality (Carnahan & Greenwood, 2018). Therefore, a dominant liberal ideology may steer bankers toward more inclusive lending behavior that favors women entrepreneurs.

In contrast, a conservative ideology promotes stability and traditional values (Eysenck & Wilson, 1978). According to this ideology, deviations from traditional values and the status quo will likely lead to negative outcomes for a society (Sowell, 2007). In addition, active attempts to reduce gender inequality are considered unfair because this ideology holds that evaluations of people should be made solely on merit (Garcia et al., 2005; Son Hing et al., 2011). Hierarchical social relationships are also a key component of conservatism, including the idea that some people and businesses should thrive while those that are less “competitive” or less “competent” should not. This idea legitimizes traditional hierarchy-enhancing behavior and relies on traditional gender-role norms, which support treating women and men differently. Specifically, the logic of distinguishing “competitive” and “competent” people who should thrive coincides with the perception that men are suitable for high-status and “breadwinner” roles, such as being an entrepreneur (Gupta et al., 2009). Meanwhile, women are praised for adhering to female-congruent roles aligning with domestic family responsibilities (Swail & Marlow, 2018). As such, a dominant conservative ideology fuels beliefs that women entrepreneurs are less competitive and less competent than men entrepreneurs (Fleck et al., 2011) and that women who become entrepreneurs may be met with negative attitudes (Heilman et al., 2004) and may be faced with harsh penalties from their environments (Rudman & Fairchild, 2004).

Therefore, a conservative ideology upholds structural gender differences in society and affects individuals’ daily work, such as legitimizing bankers’ discriminatory lending behavior against women entrepreneurs (Hoyt, 2012). For example, Hoyt and Burnette (2013) showed that the link between people’s attitudes regarding women in authority and their subsequent gender-biased evaluations benefiting men over women is significantly stronger for those with traditional attitudes (i.e., a conservative ideology) toward women in authority positions than for those with progressive attitudes (i.e., a liberal ideology). Based on the above reasoning, we offer the following hypotheses:

Hypothesis 2a The stronger the conservative ideology in a society, the lower women’s access to funding, such that women entrepreneurs’ business loan applications are rejected to a greater extent than men entrepreneurs’ business loan applications.

Hypothesis 2b The stronger the conservative ideology in a society, the poorer the credit terms offered to women such

that women entrepreneurs’ business loans are charged higher interest rates than men entrepreneurs’ business loans.

Entrepreneurship, Bank Finance, and Women’s Empowerment

As stated above, the informal social standing of women in a society may influence bankers’ decision-making about whom to finance and with what conditions. The informal standing of women is reflected in increased women’s empowerment—that is, women increasingly taking on the highest leadership roles in society—which signals a shift in gender-role stereotypes. As individual women experience empowerment within their contexts and communities, this empowerment at the individual level contributes to empowerment at the societal level (Ng et al., 2022). Hence, women taking the highest leadership positions correspond to actions that build individual and collective empowerment for breaking and recrafting gender-role stereotypes, creating more equal and inclusive societies (Haugh and Talwar, 2016; Pettit and McGee, 2019) that include, for example, efficient and fair organizational and institutional contexts.

However, women’s participation in the highest leadership positions differs between societies, and the stability of gender-role stereotypes can differ as well (e.g., Gupta et al., 2009), likely impacting the extent of gender bias in entrepreneurial bank finance. Bankers’ work processes and decisions are likely more gendered when social norms are based on clear stereotypes for appropriate gender roles. Prevailing gender-role expectations delineate social norms for occupational fit or misfit for men and women. Professions predominantly occupied by men at the macro-level, such as the highest leadership positions, underpin their categorization as masculine (Balachandra et al., 2019; Eagly & Karau, 2002). Under such circumstances, the manifestation of stereotypical masculine attributes imbues expectations of achieving success in leadership roles (Eagly & Kite, 1987; Eagly & Karau, 2002; Heilman, 1997). As such, when men dominate the highest leadership positions (e.g., ministerial positions, top managerial positions) in a society that upholds male leader stereotypes, women entrepreneurs applying for business loans go against gender-stereotypical expectations and are likely to generate negative responses in bankers’ decision-making. As men fit the role expectations, they are likely to elicit heightened interest and endorsement from bankers (Nelson et al., 2009). At the same time, women tend to encounter expectations of role misfit and are met by masculine values, male power, and dominance structures, resulting in negative responses (Adom & Anambane, 2020; Shinbrot et al., 2019).

Indeed, bankers tend to base their decision-making on expectations from prior experiences, which triggers a tendency to generalize and simplify their decision-making

(Bruns et al., 2008; Hensman & Sadler-Smith, 2011). In a context where men entrepreneurs are the usual bank clients, bankers may easily match men entrepreneurs with positive expectations. Under such circumstances, bankers more easily resort to gender stereotyping in their decision-making. Thus, obtaining bank finance may be particularly challenging for women entrepreneurs in contexts where women are less accepted in the highest leadership roles and, consequently, fewer women take on such occupations.

Specifically, women may elicit more high-risk perceptions in these contexts. In turn, bankers' high-risk perceptions of women may lead them to give men entrepreneurs access to bank finance with better conditions. Indeed, social gender norms can distort lenders' perceptions of risk, sometimes causing them to over- or under-emphasize risk based on the gender of the applying entrepreneur (cf. Sitkin & Pablo, 1992, p. 21). Exposure to clear boundaries of male entrepreneurial stereotypes built on explicit gender norms may cause bankers to perceive more risk of business failure among women entrepreneurs. As a result, bankers tend to expect women and men to differ in the qualities needed to succeed as entrepreneurs. Indeed, strong social gender-role norms likely cause bankers to perceive a clear misfit between entrepreneurial attributes and expectations for women and thus perceive women as involving higher uncertainty and risk (Eagly & Karau, 2002). Under such circumstances, bankers may be inclined to dismiss women's loan applications or offer more demanding/poorer terms for accessing bank finance. In some cases, bankers may reject women entrepreneurs entirely as misfitting deviants (Marques & Paez, 1994).

In contrast, contexts can reflect women's empowerment, maintaining a more equal distribution of the highest leadership positions in society between women and men (Triana et al., 2019). In these contexts, women are more visible in the entrepreneurial arena, providing more normative role acceptance and support for social role diversity (Goltz et al., 2015). The male leader stereotype may become less distinct and less taken for granted in such contexts, causing gender to appear less meaningful in categorizing entrepreneurs. As such, we theorize that in more equal contexts, the approval rate of business loan applications from women increases, and they secure better credit terms than in more unequal contexts. Accordingly, we assume that bankers' perceptions of women entrepreneurs depend on how much women participate in their societies' highest leadership positions (e.g., ministerial posts and top managerial positions) (Deschamps & Brown, 1983). As such, we hypothesize the following:

Hypothesis 3 In a social context characterized by high women's empowerment (vis-à-vis low women's empowerment), women entrepreneurs *are less likely* to experience (a) higher

business loan rejection rates and (b) higher business loan interest rates than men entrepreneurs.

Women Entrepreneurship, Bank Finance, and the Women's Empowerment Contexts

In contrast to the normative role expectations of women's empowerment proposed above, social dominance theory (Pratto et al., 1998; Sidanius et al., 2004) proposes that societies are organized into group-based hierarchies, which are justified by social dominance norms about how power and resources should be distributed among social groups (Sidanius et al., 2000). Men are perceived as belonging to hierarchy-enhancing roles, while women are perceived as belonging to hierarchy-attenuating roles (Pratto et al., 1997). Since the entrepreneur role is seen as hierarchy enhancing by providing bargaining power, autonomy, and a higher position, women entrepreneurs can be perceived as misfits (Anglin et al., 2022; Brush et al., 2019).

When social gender-dominance norms are threatened, responses among the higher-status groups will be to protect and maintain norms by amplifying gender stereotypic beliefs and prejudicial behavior (Stephan et al., 2002). These responses arise even when two groups are not in conflict—an individual may dislike a particular group even though the group does not pose a tangible threat. Still, the group may pose a symbolic threat that challenges one's values (Sears & Kinder, 1985). For example, when a couple of the same gender marry, nobody loses, but some people see it as threatening their values and respond negatively. Such responses are at the heart of biased evaluations to defend social dominance norms. In this defense process, various behaviors create barriers that exclude low-status groups that threaten values and ideals to favor high-status groups (Dietz-Uhler & Murrell, 1998).

Women's empowerment signals a potentially profound shift in societal power structures. In this case, there is a shift in power from a high-status group (men) to a low-status group (women), which can threaten the power and resource distribution in a society (Stephan et al., 2002). When women's participation in the highest leadership positions increases—women's empowerment—it becomes more challenging for men to maintain their dominance (Sidanius et al., 2004; Staw et al., 1981). Simultaneously, Greenberg and Mollick (2017) show that the motivation to support women comes with beliefs of needing to correct disadvantage, which decrease when the perceived shared disadvantage is less clear. Hence, women in the highest leadership positions may feel it is less imperative to push for promoting women in lower-level positions—that is, supporting women entrepreneurs when more women are at the top of a society (Cohen et al., 1998). In the bank finance context, women and men bankers are influenced by the social gender-dominance

norms surrounding them (e.g., Muravyev et al., 2009). In approving or rejecting applications or formulating credit terms, bank evaluation practices are passed on to new bankers through active instructions, demonstrations, storytelling, and non-verbal behaviors (Carter et al., 2007). Following other bankers' practices saves cognitive effort and safeguards new bankers from the sanctions of misjudgments—one is less likely to be blamed for a decision that is consistent with standard practices. Therefore, the evaluations of women by both women and men in male gender-typed leadership roles (Manzi & Heilman, 2021) are biased toward qualities more commonly ascribed to men (Ellemers et al., 2012; Schein, 1975). The threat to social norms of men's dominance due to an increased number of women in higher leadership positions likely activates gender stereotypes to maintain the status quo and reduce uncertainty (Baer et al., 2010; Kamphuis et al., 2011). Ultimately, when entrepreneurs' loan applications are assessed in such contexts, women face an increased risk of being downgraded by assessors (Ryan et al., 2016). The theoretical mechanisms underlying this disadvantage are twofold.

First, increased societal attention toward women breaking social gender-dominance norms introduces pressure to change the hierarchical distribution of power and resources at other levels of society (Gruber, 1998; Uggen & Blackstone, 2004). Such pressure may threaten banks' traditional practices in evaluating an entrepreneur's creditworthiness, distributing finance, and constructing a loan portfolio. These threats can induce bankers to react with increasing prejudice against women entrepreneurs. This prejudice includes questioning whether women-run businesses have the competencies to achieve success and if women are entrepreneurs because of "system support" (e.g., gender quotas) and are not sufficiently competent for the role—questions asked less about men entrepreneurs. What follows is bankers questioning the quality of the entrepreneurship growing from women's empowerment with unchecked fear of a mass of low-value-added venturing by women seeking bank funding. Indeed, studies conducted in other contexts have found that a perceived threat increases caution for losses and errors (Brodish & Devine, 2009; Seibt & Förster, 2004); such caution is reflected in the prevention-focused questions resource providers ask women entrepreneurs (i.e., vigilance against losses) in contrast to the promotion-focused questions they ask men (Kanze et al., 2017). Therefore, when a banker's evaluation practices are threatened, they are more likely to assign risk and potential for loss to women entrepreneurs.

Second, gender hierarchies are repeatedly enacted and negotiated within social interactions, and the results are expressed in gendered practices (Carter et al., 2007; Eddleston et al., 2016). These practices result in context-specific conceptions of codes of conduct that reinforce the social dominance norms of power and resource distribution at the

macro-level (West & Zimmerman, 1987). In the hierarchy-enhancing bank finance context, banks offer financially solid customers better conditions than their counterparts (Aiello et al., 2018) and disproportionately allocate more finance to dominant groups than to subordinate groups, thereby promoting inequality (Pratto et al., 1998). Bankers may perceive the increased macro-level pressure for equal access to finance as compromising their banks' traditional codes of conduct that require them to avoid high risks. Bankers may also perceive this pressure as a threat to their positions in their banks (e.g., a wrong funding decision could hamper their career development), economic advantages (e.g., bonus-based salary), and social status (South et al., 1982). Bankers may also be concerned about being second-guessed by their banks' top management as financing women's businesses is often perceived as increasing banks' risk taking (Wilson & Liu, 2003). Therefore, bankers protect themselves against criticism by responding to this threat with increased questioning of women entrepreneurs' creditworthiness to rationalize rejecting their loan applications or requiring a risk premium (i.e., higher interest rates) from women fortunate enough to receive a loan. Based on the above reasoning, we offer the following hypothesis:

Hypothesis 3 alternative In a social context characterized by high women's empowerment (vis-à-vis low women's empowerment), women entrepreneurs *are more likely* to experience (a) higher business loan rejection rates and (b) higher business loan interest rates than men entrepreneurs.

Research Method

Literature Search

We conducted a systematic keyword search in March 2018 to generate a potential pool of studies. We first searched several databases (including EBSCO, Scopus, JSTOR, PsycINFO, Web of Science, Social Science Citation Index, and the SSRN repository) using a combination of search terms related to gender (i.e., gender, bias, gender difference, male/female entrepreneur, women/men entrepreneurs, women/men CEO, women-led ventures, women-owned business, female-led business, female-owned business, stereotype, and sex) and access to bank finance (i.e., forms and combinations of finance, money, funds, funding, debt, capital, credit, bank loan, equity, formal and informal investment, angel, venture capital, institutional lending, IPO, investor, and bank loan officer). We manually searched the entrepreneurship journals with the highest impact factors (i.e., *Entrepreneurship Theory and Practice* and *Journal of Business Venturing*). Finally, we reviewed the conference proceedings of relevant annual conference meetings (e.g., Academy of Management,

Diana International Research Conference). We restricted our search to academic studies as they have systematic standards for reporting the information needed to calculate effect sizes for a meta-analysis. This search yielded 5797 articles.

Inclusion and Exclusion Criteria

First, we did a broad screening of the 5797 articles. We removed all duplicates ($n=473$) and eliminated studies ($n=56$) that were not retrievable via the authors' university rights. Next, we read the titles and abstracts of the remaining studies to determine whether their focus was on entrepreneurs' gender and access to bank finance. We eliminated 5097 studies because they did not sufficiently engage the topic area. We removed an additional 28 papers because they only focused on women entrepreneurs and access to finance without considering men entrepreneurs. This process resulted in a more focused set of 157 papers.

Second, when reading the full text of the 157 articles, we adopted finer-grained inclusion criteria. We included only studies that (1) focused on gender and formal debt capital, excluding studies that did not clearly distinguish between equity and debt (e.g., Roper & Scott, 2009); (2) investigated formal debt capital from a supply-side perspective, and (3) were empirical with a dependent variable representing loan rejection and/or interest rate and reported sufficient statistical information. We also included unpublished studies, such as working papers, dissertations, and conference papers, to reduce the threat of publication bias (Harrison et al., 2017). We excluded studies in languages other than English to ensure that all the authors could read the primary studies we explored, as well as unpublished papers later published in journals to eliminate duplicate studies. We did not exclude studies with overlapping authors that reported different relationships or used different samples or periods.

Applying these criteria, our final sample included 31 studies (over 1.4 million unique observations) across a broad range of regions (Asia, North and South America, Europe, and the Middle East). Of these, 25 were published, and six were unpublished. The publication window ranged from 1998 to 2018. Appendix 1 lists the included studies.

Coding Procedure

We read the articles and developed a coding protocol to extract data on all relevant variables and study characteristics (Lipsey & Wilson, 2001). When multiple measurements of the focal effect were reported in one study, we followed prior meta-analyses (e.g., Vishwanathan et al., 2020) and included them in our analyses. We conducted a hierarchical linear modeling meta-analysis (Raudenbush & Bryk, 2002) to rule out the possibility that stochastic dependencies between multiple effects sizes obtained from

a single primary study distorted our results. We used each effect size as a Level 1 observation and the study from which it was derived as Level 2. The results indicate that this potential distortion does not substantively influence our results ($ES_{interest\ rate}=0.321$, $p=0.000$; $ES_{loan\ rejection}=0.109$, $p=0.000$).

Variables

Dependent and Independent Variables

We captured access to bank finance with two variables: loan rejection and loan interest rate. Thus, our dependent variables are the effect sizes (i.e., the meta-analytic mean association) of the relationships between (1) entrepreneurs' gender and loan rejection and (2) entrepreneurs' gender and loan interest rate. The primary studies in our sample operationalized *loan rejection* as the number of applicants whose loan applications were rejected (e.g., Ongena & Popov, 2016) or as the rejection rate (e.g., Orser et al., 2006). *Loan interest rate* was typically operationalized in the primary studies as a continuous variable capturing the interest rate paid by the borrower (e.g., Wu & Chua, 2012). *Entrepreneurs' gender* was operationalized in the primary studies with a dummy variable that typically took the value of 1 if the person was a woman and 0 if a man. We reversed the variable when the dummy code in a study was in the opposite direction.

Moderating Variables

We captured women's empowerment with two variables—the proportion of women in politics and the proportion of women in management (Metcalf, 2008; Stavrou et al., 2015). We operationalized the *proportion of women in politics* as the share of seats held by women in the national parliament. Following prior studies (Studlar et al., 2002), these data were obtained from the Inter-Parliamentary Union database (retrieved from the World Bank). We operationalized the *proportion of women in management* as the share of women in managerial positions. We retrieved these data from the International Labour Organization database (ILO, 2020), which has been used, for example, to measure occupational diversity (Filippetti & Guy, 2020).

Following prior studies (e.g., Aguilera et al., 2021; Wang et al., 2019), we operationalized a country's *political ideology* as the dominant political orientation of the ruling party. We first classified a country's political ideology according to three categories: 1 = when the political ideology of the ruling party was right leaning (i.e., conservative, Christian democratic, right wing), 0 = when the ideology was in the center (i.e., centrist), and -1 = when the ideology was left leaning (i.e., communist, socialist, social democratic, left wing). We assigned the missing value for Jordan based on

geographical-historical proximity³ and used the average for Lebanon and Israel (0) (for a similar approach, see Crossland & Hambrick, 2011). Second, we followed prior studies (Aguilera et al., 2021; Wang et al., 2019) and weighted the party ideologies with their proportion of seats in parliament to assess each ruling party's decision-making power. We gathered these data from the Database of Political Institutions (Scartascini et al., 2020), which has been widely used in prior studies (e.g., Aguilera et al., 2021; Wang et al., 2019).

We coded the country where a particular study was conducted, and the year the data were collected to merge the external data with the primary studies. When the data collection was conducted over multiple years, we took the median of these years. We then matched the values from the external datasets with the primary studies' countries and years of data collection. Motivated by the institutional perspective that social norms, values, and behavior change slowly (Williamson, 2000), we lagged the variables by 1 year. If data were unavailable for a specific year, we assigned the missing values based on the latest available data. When studies included multiple countries in their analyses, we assigned the values for each country and took the average. We included multi-country studies in our moderator analyses only when the countries were geographically and historically close (Stefani & Vacca, 2014). However, we excluded multi-country studies based on geographically and historically distant countries (e.g., Cole & Dietrich, 2017). Appendix 2 reports the summary statistics.

Control Variables

We included several control variables in our meta-regressions. At the study level, we included a dummy variable for whether a study was published or not (reference group) to test for the file drawer problem (i.e., the tendency of journals to publish significant results instead of non-significant results) (Rosenthal, 1979).⁴ We also included the *journal*

impact factor (i.e., we retrieved the impact factor when the studies were collected and assigned a value of 0 for unpublished studies) to account for the effect of journal importance. We controlled for the GDP per capita (World Bank) at the country level because countries' economic development correlates with funding availability (Martinez et al., 2015). We opted to include GDP per capita rather than the country's development stage (developed vs. developing) because most of the effect sizes in our sample stem from primary studies conducted in developed countries.

We included two variables to account for the business regulatory and legal environment—ease of accessing credit and formal institutions: *Ease of accessing credit*, an indicator of the Ease of Doing Business index, reflects the strength of credit reporting systems and the effectiveness of collateral and bankruptcy laws in facilitating lending (World Bank, 2020). *Formal institutions* is an index retrieved from Berone et al. (2020) capturing countries' general regulatory and policy environments. Individuals often have more difficulty accessing capital in countries with less enforced formal institutions (Boudreaux & Nikolaev, 2019). We inferred the value for Senegal based on geographical-historical proximity and used the average of Ghana, Nigeria, and Cameroon (0.497). If data were unavailable for a specific year, we provided the missing values based on the latest available data.

Meta-Analytic Procedure

Computation of Effect Sizes

Since our analysis compares women's access to formal debt capital with men's access to formal debt capital (i.e., a dichotomous variable), we used standardized mean differences (d) rather than correlation coefficients (Borenstein et al., 2009). We computed the d values using the formula by Cohen (1960) (see Appendix 3). Following Stephan et al. (2022), we provide the following illustrative example for the general interpretation of the d statistics: a standardized mean difference of $d=0.50$ would imply that women entrepreneurs score half a standard deviation higher on interest rates than men. When means, sample sizes, and standard deviations were not provided, we converted other statistical information (e.g., beta coefficients, correlations, t values, F values, odds ratios) to d values using the formulas detailed by Lipsey and Wilson (2001). To remove bias in the estimations of d for small samples, we applied a correction factor to convert Cohen's d to Hedges' g (Borenstein et al., 2009). Appendix 4 provides examples.

Hedges–Olkin Meta-Analysis Procedure

We used Hedges–Olkin meta-analysis (HOMA, Hedges & Olkin, 1985) to compute the meta-analytic mean effect size

³ Research in management has investigated to what extent countries are clustered according to institutional and organizational similarities and has found that countries are clustered in recognizable patterns based on commonalities in language and religion, shared geographic borders, and a history of socio-political interactions over centuries (e.g., Ronen & Shenkar, 1985). Examples of clusters are Anglo (e.g., United Kingdom, United States), Germanic (e.g., Austria, Germany), and Nordic (e.g., Denmark, Norway).

⁴ Following best practice recommendations (Steel et al., 2021), we performed several analyses on publication bias. In addition to comparing study sources (published versus unpublished), we conducted the following tests: (1) Duval and Tweedie's (2000) trim and fill and (2) precision-effect estimate with standard errors (PET-PEESE) (Stanley & Doucouliagos, 2014). The results indicate that publication bias is present, but the findings remain relatively stable across these tests. Thus, our results are only partially affected by this bias.

of entrepreneurs' gender and access to bank finance. To obtain an appropriate estimate of the meta-analytic mean effect size, we considered differences in precision across effect sizes and variability in the population of effects (Lipsey & Wilson, 2001). The optimal measure of precision for a given effect size is the inverse variance weight w , which is the inverse of the squared standard error value of the effect size (Hedges & Olkin, 1985). We used these weights to calculate the meta-analytic mean effect size, standard error, and the corresponding confidence interval (see Appendix 3). Following current standards in the meta-analytic literature (Geyskens et al., 2009), we used random-effects estimation models in the HOMA to account for potential heterogeneity in the effect size distribution.

Mixed-Effects Meta-Regression Procedure

We used the mixed-effects meta-regression (MARA, Lipsey & Wilson, 2001) technique to test for the moderating effects. In MARA, the dependent variable is the effect size of the relationship between two primary study variables. In our study, the standardized mean difference is between women entrepreneurs (vis-à-vis men entrepreneurs) and loan rejection and between women entrepreneurs (vis-à-vis men entrepreneurs) and loan interest rate. MARA estimates a linear regression model in which the dependent variable (effect size estimates) is regressed on a set of predictors (i.e., the moderators). In our study, this is the proportion of women in politics, the proportion of women in management, political ideology, and the control variables (Gonzalez-Mulé & Aguinis, 2018). To obtain correct parameter estimates, we weighted the effect sizes by their inverse variance weight w (Hedges & Olkin, 1985).

Results

Baseline Relationship

We used Hedges' g -based HOMA to test Hypotheses 1a and 1b, which predicted that women entrepreneurs' business loan applications are (H1a) rejected to a greater extent than men entrepreneurs' loan applications, and (H1b) women entrepreneurs are charged higher interest rates than men entrepreneurs. The results show that the relationship between women entrepreneurs and loan rejection is positive and statistically significant ($ES=0.126$, $p=0.000$; $SE=0.031$; CI 95% 0.067; 0.186, $k=78$, $n=468,535$), indicating that women entrepreneurs' applications are rejected to a greater extent than men entrepreneurs' applications—0.126 standard deviation higher on loan rejection. This finding supports Hypothesis 1a. Our results further reveal that the relationship between women entrepreneurs and loan interest rate is positive and

statistically significant ($ES=0.087$, $p=0.000$; $SE=0.016$; CI 95% 0.055; 0.119; $k=104$, $n=29,543,064$), indicating that women entrepreneurs are charged higher interest rates than men entrepreneurs—0.087 standard deviation higher on interest rate. This finding supports Hypothesis 1b.

Substantial heterogeneity is a necessary pre-condition for testing boundary conditions in meta-analyses (Gonzalez-Mulé & Aguinis, 2018). We calculated two indices of heterogeneity: (1) the Q index, which indicates the presence versus absence of heterogeneity, and (2) the I^2 index, which indicates the extent of that heterogeneity. The Q index is positive and significant for both effect sizes (entrepreneurs' gender/loan rejection: $Q=32,977.924$, $p(Q)=0.000$; entrepreneurs' gender/loan interest rate: $Q=787,088.576$; $p(Q)=0.000$), which implies that heterogeneity is present in our study. The I^2 indices of 99% for both effect sizes (entrepreneurs' gender/loan rejection: $I^2=0.998$; entrepreneurs' gender/loan interest rate: $I^2=0.999$) also imply that high heterogeneity is present (Huedo-Medina et al., 2006). Thus, there is a need to further theorize and test moderators.

Moderating Role of Political Ideology (Context)

We used MARA to test Hypotheses 2a and 2b, which predicted that the stronger the conservative ideology in a society is, the lower women's access to funding. Specifically, we predicted that women entrepreneurs' loan applications are (H2a) rejected to a greater extent than men entrepreneurs' loan applications and (H2b) charged higher interest rates than men entrepreneurs in such contexts. Table 1 reports the results for *loan rejection*. Model 1 (Table 1) reports the effects of the control variables. Neither the study nor the country-level characteristics affect the focal relationship. Model 2 (Table 1) tests Hypothesis 2a and shows that the coefficient estimate for political ideology ($\beta=0.025$; $p=0.770$) is positive but non-significant ($k=71$, $R^2=0.101$). Thus, this finding does not provide support for Hypothesis 2a.

Table 2 reports the results for *loan interest rate*. Model 4 (Table 2) reports the effects of the control variables and shows that the positive relationship between entrepreneurs' gender and interest rate is more positive in higher GDP countries ($\beta=0.000$; $p=0.000$). A significant negative effect for journals with higher impact factors indicates that studies with more positive results (i.e., more women entrepreneurs experiencing higher interest rates) are published in less prestigious journals ($\beta=-0.137$; $p=0.000$). The other controls are not significant. Model 5 (Table 2) tests Hypothesis 2b and shows that the positive relationship between entrepreneurs' gender and interest rate is more positive in countries with a more conservative ideology ($\beta=1.078$; $p=0.000$, $k=100$, $R^2=0.386$). This finding indicates that women entrepreneurs (vis-à-vis men entrepreneurs) are charged

Table 1 Meta-analytic regression results for the relationship between entrepreneurs' gender (women vis-à-vis men) and loan rejection

Dependent variable: Entrepreneurs' gender (women vis-à-vis men) loan rejection			
	Model 1	Hypothesis 2a Model 2	Hypothesis 3a vs. 3b Model 3
Published study	– 0.138 (0.117)	– 0.139 (0.120)	– 0.112 (0.223)
Impact factor	0.021 (0.419)	0.023 (0.397)	0.028 (0.311)
GDP	0.000 (0.257)	0.000 (0.362)	0.000 (0.788)
Formal institutions	– 0.294 (0.500)	– 0.212 (0.685)	0.558 (0.431)
Ease of accessing credit	– 0.003 (0.571)	– 0.004 (0.528)	– 0.027 (0.112)
Political ideology		0.025 (0.770)	0.076 (0.385)
Proportion of women in politics			0.331 (0.005)
Proportion of women in management			1.082 (0.025)
R^2	0.099	0.101	0.251
k	71	71	71

p -values in parentheses, R^2 = variance explained, k = number of effect sizes

Table 2 Meta-analytic regression results for the relationship between entrepreneurs' gender (women vis-à-vis men) and loan interest rate

Dependent variable: Entrepreneurs' gender (women vis-à-vis men) loan interest rate			
	Model 4	Hypothesis 2b Model 5	Hypothesis 3a vs. 3b Model 6
Published study	0.039 (0.533)	0.161 (0.006)	0.364 (0.000)
Impact factor	– 0.137 (0.000)	– 0.111 (0.000)	– 0.111 (0.000)
GDP	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Formal institutions	– 0.351 (0.151)	0.155 (0.510)	1.084 (0.000)
Ease of accessing credit	– 0.000 (0.956)	0.000 (0.965)	– 0.021 (0.000)
Political ideology		1.078 (0.000)	1.074 (0.000)
Proportion of women in politics			0.103 (0.000)
Proportion of women in management			0.379 (0.000)
R^2	0.130	0.386	0.409
k	100	100	100

p -values in parentheses, R^2 = variance explained, k = number of effect sizes

higher interest rates the more conservative the country is, supporting Hypothesis 2b.

Moderating Role of Women's Empowerment (Context)

We used MARA to test the competing Hypothesis 3 and Hypothesis 3 alternative. In Hypothesis 3, we hypothesized that in a social context characterized by high women's empowerment (vis-à-vis low women's empowerment), women entrepreneurs *are less likely* to experience (H3a) higher business loan rejection rates than men entrepreneurs and (H3b) higher business loan interest rates than men entrepreneurs. In contrast, Hypothesis 3 alternative hypothesized that in a social context characterized by high

women's empowerment (vis-à-vis low women's empowerment), women entrepreneurs *are more likely* to experience (H3a alternative) higher business loan rejection rates than men entrepreneurs and (H3b alternative) higher business loan interest rates than men entrepreneurs.

Table 1 reports the results for *loan rejection*. Model 3 (Table 1) shows that the coefficient estimates for both the proportion of women in politics ($\beta = 0.331$; $p = 0.005$) and the proportion of women in management ($\beta = 1.082$; $p = 0.025$) are positive and statistically significant ($k = 71$, $R^2 = 0.251$), explaining approximately 15% of the additional variance in the effect size of loan rejection compared to the controls-only model. These findings indicate that in societies where more women participate in the highest leadership positions in politics and management,

the positive relationship between women entrepreneurs (vis-à-vis men entrepreneurs) and *loan rejection* is more positive. These findings provide support for Hypothesis 3a alternative.

Table 2 reports the results for *loan interest rate*. Model 6 (Table 2) shows that the coefficient estimates for the proportion of women in politics ($\beta=0.103$; $p=0.000$) and the proportion of women in management ($\beta=0.379$; $p=0.000$) positively moderate the relationship between entrepreneurs' gender and loan interest rate ($k=100$, $R^2=0.409$), explaining approximately 2.3% of the additional variance in effect size compared to the controls-only model. These results indicate that in contexts characterized by higher women's empowerment, the positive relationship between women entrepreneurs (vis-à-vis men entrepreneurs) and higher *loan interest rates* is more positive.⁵ These findings support Hypothesis 3b alternative.

Additional Analyses

We further asked whether and how the interplay between political ideology and women's empowerment influences the relationships between entrepreneurs' gender and both loan rejection and loan interest rate. We explored this possibility by testing political ideology as a moderator of the moderating role of women's empowerment in the relationships between entrepreneurs' gender and loan rejection and loan interest rate with MARA. We added the product term of the proportion of women in politics and political ideology and the product term of the proportion of women in management and political ideology to the analyses.

For *loan rejection*, the results show that the product terms for both the proportion of women in politics x political ideology ($\beta=0.098$; $p=0.907$, $R^2=0.251$) and the proportion of women in management x political ideology ($\beta=0.220$; $p=0.710$, $R^2=0.253$) are non-significant. For *loan interest rate*, the results reveal that the product term for women in management x political ideology is significant ($\beta=0.115$; $p=0.025$, $R^2=0.424$). However, the product term for women in politics x political ideology is only marginally significant ($\beta=-0.075$; $p=0.088$, $R^2=0.423$).

To better understand the significant three-way interaction between loan interest rate and the proportion of women in management, we split the sample based on the median value of political ideology (conservative vs. liberal) and then conducted HOMA sub-group analyses. Appendix 5 reports the results. In conservative contexts, while the effect size for a low proportion of women in management is positive

and significant ($ES=0.166$, $p=0.000$, $k=44$), the effect size for a high proportion of women in management is positive but turns non-significant ($ES=0.113$, $p=0.528$, $k=14$). In liberal contexts, the effect size is negative and non-significant ($ES=-0.168$, $p=0.446$, $k=23$) for a low proportion of women in management and positive and non-significant for a high proportion of women in management ($ES=0.034$, $p=0.873$, $k=19$). A Q -test based on an analysis of variance that further tests group membership (Borenstein et al., 2009) shows significant between-group heterogeneity for both the comparison of a high proportion of women in management in conservative versus liberal environments ($Q_{between}=3158.902$, $p=0.000$) and the comparison of a low proportion of women in management in conservative versus liberal environments ($Q_{between}=48,374.133$, $p=0.000$).

Although most of the effect sizes for the interaction terms are not significant, the Q -test shows that the effect sizes significantly differ between conservative and liberal contexts. While we should be cautious in inferring too much from the lack of statistically significant effect sizes, the size and the signs of the effect sizes, in addition to the significant Q -test, indicate that interest rates are constantly higher for women in conservative contexts than in liberal contexts independent of the proportion of women in management. However, suppose we interpret the non-significant effect sizes as no discrimination (i.e., equal interest rates for women and men). In that case, we see that increasing women's empowerment in conservative contexts might lessen discrimination as the effect size changes from positive and significant to non-significant. Following this logic, there is no discrimination and effect from women's empowerment liberal contexts as both effect sizes are non-significant. These exploratory findings may indicate that adding more women to the highest management positions may alleviate the discrepancy in interest rates between women and men entrepreneurs in conservative countries. We elaborate more on these findings in the "Discussion" section.

Discussion and Future Outlook

Our meta-analysis integrates empirical evidence from more than 20 years of research to understand whether women's formal social standing (reflected in the political ideology of a country) and informal social standing (reflected in women's empowerment) within their societies explain variation in women entrepreneurs' (vis-à-vis men entrepreneurs') conditions for accessing bank financing. While our work adds general confidence to role congruity theory by showing gender bias against women in entrepreneurial bank finance, we also offer a contextualized perspective anchored in the social gender-norm framework and social dominance theory. In doing so, we find that the political ideology of a

⁵ We provide the economic effects of the moderation of women's empowerment on the relationships between entrepreneurs' gender and loan rejection and loan interest rates in Appendix 4.

country—conservative versus liberal—influences women’s access to bank finance. Women entrepreneurs pay higher business loan interest rates than men in nations with a conservative (rather than a liberal) political ideology. Our findings show that women’s formal standing in societies provides a context to further understand women entrepreneurs’ conditions for pursuing entrepreneurship. Our findings show that women’s empowerment increases the gender bias against women in entrepreneurial bank finance. As such, by strengthening the informal standing of women in societies threat perceptions increase and activates resistance such that women’s conditions for accessing bank finance deteriorate. The notion of women’s empowerment used in this study represents a threat to resources and power distribution in societies, with women’s empowerment reflecting a shift in the balance of this distribution in particular contexts.

Implications and Directions for Future Research on Gender Bias in Entrepreneurial Financing

Our findings show that women’s empowerment is likely not a quick solution to gender-related problems and can increase the gender bias against women in entrepreneurial bank finance. These findings enrich recent work on gender and entrepreneurship (Guzman & Kacperczyk, 2019) and on women’s empowerment (Desai et al., 2022). While prior literature has suggested that women’s empowerment in societies can help break down social norms to promote gender equality (Desai et al., 2022; Duflo, 2012), we show—in line with social dominance theory—that women’s empowerment, in general, can increase bias against women entrepreneurs in bank finance. In parallel, women in societies’ highest leadership positions may feel no need to push for promoting women in lower-level positions (e.g., women entrepreneurs) when there is more equal gender representation at the top of a society (cf. Greenberg & Mollick, 2017). This insight is important as it offers a new perspective on how the banking establishment responds to women’s empowerment—with apparent backlash.

These findings also contribute theoretically to the boundaries of role congruity theory (Eagly & Karau, 2002) and social dominance theory (Staw et al., 1981) by revealing how and why responses to women’s empowerment are tied to the dominant social gender norms of a context at the macro-level, which influences access to entrepreneurial bank finance at the micro-level. By uniting social gender norms with behaviors at the individual level—namely, bankers’ decision-making—our theoretical framework and empirical evidence help bridge the macro–micro divide in gender differences.

Furthermore, our findings imply that future research needs to pay close attention to the social gender norms of a society to understand why bankers respond more negatively

to women entrepreneurs’ loan applications than to men entrepreneurs’ loan applications. Future research might advance this line of inquiry by identifying differences in women’s empowerment. For example, we theorized that women increasingly taking the *highest* leadership roles in a society—in top management and politics—threaten social gender-dominance norms. It might be that women in lower-level leadership roles (e.g., middle management) may be less threatening to social gender-dominance norms. It may, therefore, have a less magnifying effect on gender bias against women in entrepreneurial bank finance. Moreover, it seems possible that the moderating role of women’s empowerment is non-linear (Chang et al., 2019; Torchia et al., 2011). Increasing numbers of women in the highest leadership roles likely threaten social gender-dominance norms when women in such positions have not reached critical mass (social dominance theory). However, societies likely perceive women in the highest leadership positions as role congruent and not a threat when they have reached critical mass (role congruity theory). Our supplementary analyses show initial evidence of a non-monotonic relationship, albeit one that is U-shaped, so we encourage researchers to continue to explore this issue (see Appendix 6).

Additionally, our study extends the emergent exploratory work on political ideology in entrepreneurship and management (Chin et al., 2021; Jarrodi et al., 2019; Park et al., 2020) by showing that the threat of women’s empowerment in contexts dominated by a conservative ideology hampers women’s access to bank financing *less* than in liberal contexts (although these environments have greater discrimination against women entrepreneurs). This insight is important as it demonstrates that the political ideology of a country provides a social context in which to interpret women’s entrepreneurship and empowerment. It also complements the literature showing that individuals embedded in a conservative ideology are reluctant to change social norms, such as those that support gender inequality, dampening bankers’ appraisals of threats from signals of women’s empowerment. As such, we posit that the dominant ideology in a country may serve as an important yet under-researched dimension for understanding how women’s participation in the highest leadership positions at the macro-level relates to gender-biased access to bank finance at the micro-level. Indeed, investigating different types of bank-financing outcomes or new forms of finance (e.g., crowdfunding) may further our understanding of how and when a nation’s political ideology shapes the moderating role of women’s empowerment in financing women entrepreneurs.

Moreover, our additional analyses offer interesting insights into the interplay between political ideology and women’s empowerment and how it influences the relationship between entrepreneurs’ gender and access to bank financing. If we interpret the non-significant effect sizes as

no discrimination, our exploratory findings may indicate that adding more women to the highest management positions in conservative countries may alleviate gender discrimination in entrepreneurial bank financing (for interest rates only). Thus, the nature of the relationship between entrepreneurs' gender and bank financing may be contingent on the interplay between women's formal and informal social standing within their societies. It seems possible that women's informal social standing within a society counteracts the rigid nature of a conservative political ideology. A potential reason for this counteraction may be that in conservative contexts, increased women's empowerment may help combat social norms for gender-"appropriate" roles (Davis & Greenstein, 2009) and allow bankers to appraise women entrepreneurs as equal to men because any overall changes in women's standing are held in check by the conservative political ideology. Accordingly, how women's empowerment is conceived and interpreted seems intertwined with contextual variations in political ideology (Hoyt, 2012; Hoyt & Burnette, 2013). The formal standing of women in societies may also determine how changes in the informal standing of women are perceived, suggesting that there is not a single and universal threat perception to women's empowerment. Women's empowerment seems sensitive to the formal notions of power distribution in a society (Ng et al., 2022). Future efforts to study the interplay between women's formal and informal social standing within their societies and its effects on gender discrimination in entrepreneurial bank financing are warranted.

Finally, a particularly fruitful avenue for future research is to explore other conditions that influence perceptions of women's empowerment in societies. For example, we suspect women's empowerment is seen as less gender-role threatening in women-dominated industries but more so in male-dominated industries. Thus, while our study context—bank financing—is male dominated and hierarchy enhancing, our findings will likely differ in neutral or female-dominated contexts. We call for more research to investigate how women's empowerment influences the gender gap in more or less male- and/or female-dominated industries.

Practical Implications

Our findings also offer insights for policymakers and lenders, who should be mindful that gender bias exists in entrepreneurial bank finance. Policymakers can focus on interventions that reduce the deep-rooted gendered processes of the financing industry. Such policy initiatives could, for example, include training for banking personnel or support mechanisms for women entrepreneurs when they apply for loans. Importantly, our finding that increasing the number of women in the highest leadership roles increases the gender gap in entrepreneurial bank finance does not imply

that policymakers should hinder women's empowerment. However, this finding implies that women's empowerment is not a quick solution to overcoming bias against women in entrepreneurial finance. Thus, we must emphasize women's empowerment as an opportunity rather than a threat to support a positive change in women's access to entrepreneurial finance. Intervention programs could influence related perceptions in multiple domains—politics and management.

Limitations

All meta-analyses aggregate findings from the primary studies and may thus be limited by the limitations of these primary studies and their respective publication processes. First, the "file drawer" problem, which means that statistically non-significant results are less likely to be included in meta-analyses, influences the interpretation of our findings (Dalton et al., 2012; Rosenthal, 1979). Our analyses show that this problem only partially affects our findings (see Footnote 4). Second, causality is often a concern in meta-analyses. We cannot rule out the possibility that women entrepreneurs' prior access to bank financing influences bankers' gender bias. Future research might thus test the causality of our model.

Another possible limitation of our study is the number of studies included in our meta-analysis (31). Although the number of studies is relatively small, the number of observations stemming from the 31 studies is relatively large (more than 1.4 million unique observations), allowing us to draw conclusions from our results. Furthermore, our sample size is consistent with other recent meta-analyses [e.g., sample sizes of 23 (Winchester et al., 2021) and 35 studies (Brownell et al., 2021)]. In addition, our meta-analysis identifies gaps in the existing literature where future research needs to gather empirical data. Furthermore, our measures of women's empowerment with indicators of the proportion of women in the highest leadership positions in management and politics may constrain the interpretation of our results. We encourage future research to investigate, for example, women's empowerment in the finance sector. We acknowledge that the studies in our meta-analysis span a period when bank processes may have developed and become increasingly standardized. We encourage future studies to analyze the future effects of these developments.

Moreover, we encourage future research to investigate the potential effects of confidence in applying for bank funding. Through socialization, women may have been taught by the experience of being turned down not to apply for a loan unless they are confident they will secure approval. Accordingly, our dataset may include mainly women with such confidence. Thus, if women apply for bank funding the same way as men (i.e., without necessarily having such confidence), their access to financing

and the credit terms they receive may be even worse. Therefore, the gender bias in bank financing may be even greater than we show. Further, the period investigated in this study covers a time when new regulations prohibiting gender discrimination were introduced, so we encourage future studies to investigate the effects of such regulations on women's access to funding. In addition, although we controlled for relevant macro-level factors (GDP, formal institutions, ease of accessing credit), future studies would benefit from controlling for more specific macro-economic factors, such as women's interest rates relative to market interest rates. Finally, the studies included in our review did not provide information on the incomes of the entrepreneurs applying for loans, so we were not able to control for this. We encourage future studies to include this in their analyses as entrepreneurs' incomes likely influence banks' financing decisions.

Conclusion

This meta-analysis synthesizes existing research on entrepreneurs' gender and access to bank finance. It offers a social gender-norm perspective to explain the gender bias against women entrepreneurs (vis-à-vis men entrepreneurs) in accessing bank finance. In particular, in contexts dominated by a conservative (rather than a liberal) political ideology, women entrepreneurs encounter more gender bias in entrepreneurial bank finance than men entrepreneurs. The threat to social gender norms from women's empowerment increases this gender bias in entrepreneurial bank finance. Specifically, our results indicate that the gender gap in entrepreneurial bank finance is strengthened in societies dominated by a conservative (rather than liberal) political ideology and societies with greater women's empowerment. Our meta-analysis suggests it is time to adopt a more refined approach to researching the bias against women in entrepreneurial finance that considers the social gender-norm contexts in which entrepreneurs are embedded. We encourage future research to recognize macro-level contextual variables, such as political ideology and women's empowerment, to understand the conditions of women's entrepreneurship. For instance, researchers should consider using experimental or quasi-experimental methods to identify the causal mechanisms linking political ideology to women's financial conditions, as well as look at the wider context and how it is linked to associated findings. Research could, for example, investigate the role of media and public discourse in shaping public perceptions and attitudes toward women's economic participation and how media and public discourse might be influenced by conservative and liberal ideologies. Future research could also take a finer-grained

view and analyze factors like wage gaps, labor force-participation rates, and GDP accumulation to determine if there are consistent patterns of gender bias and how progress can be fostered.

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Data availability The data that support the findings of this study are available upon reasonable request.

Declarations

Conflict of interest We wish to confirm that there is no known conflict of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome. We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed. We further confirm that the order of authors listed in the manuscript has been approved by all of us. We confirm that we have given due consideration to the protection of intellectual property associated with this work and that there are no impediments to publication, including the timing of publication, with respect to intellectual property. In so doing, we confirm that we have followed the regulations of our institutions concerning intellectual property.

Informed Consent It is not applicable with informed consent due to human participants and/or animals rights.

Research Involving Human and/or Animals Rights This study does not involve human participants and/or animals.

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