

# Women Hold Up Half the Sky? Informal Institutions, Entrepreneurial Decisions, and Gender Gap in Venture Performance

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## Abstract

Studies that apply gender role congruity theory (GRCT) have focused on resource providers' biased evaluations and women entrepreneurs' internalization of gender stereotypes as primary mechanisms explaining the gender gap in venture performance. We provide an institutional foundation for GRCT and argue that informal political-cultural institutions—namely, government interference in market-based competition and cultural beliefs regarding gender inequality—differentially shape male versus female entrepreneurs' venture performance through their influences on entrepreneurs' industry selection and participation in after-work social activities. Our study of 7,626 Chinese entrepreneurial firms provides strong support for our arguments and contributes to women's entrepreneurship theory and practice.

## Keywords

women's entrepreneurship, gender role congruity theory, institutional theory, entrepreneurial decisions, venture performance

A growing strand of research is building on gender role congruity theory (GRCT) to explain the persistent gender gap in venture performance (Gupta et al., 2008; Malmström et al., 2017). According to GRCT, gender stereotypes are socially constructed, and prejudice is revealed when individuals perform roles that are perceived as incongruent with their stereotyped attributes and roles (Eagly, 1987; Eagly & Karau, 2002). For example, men are associated with agentic qualities (e.g., assertiveness and aggressiveness) and leadership roles and are perceived as a better fit for high-risk entrepreneurial settings and growth-oriented industries. Women, on the other hand,

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are associated with communal qualities (e.g., nurturing and helpfulness) and caregiver roles and are seen as more congruent with low-risk, necessity-based businesses (Bendell et al., 2019; Gupta et al., 2019; Marlow, 2002; Welter et al., 2017). According to this theory, women are less favored by resource providers for leadership roles (Gupta et al., 2018) and may even internalize gender stereotypes and have a lower preference for entrepreneurship (Gupta et al., 2008, 2009; Wieland et al., 2019). As a result, both resource providers' biased evaluations and women entrepreneurs' internalization of gender stereotypes may perpetuate and sustain the gender gap in venture performance.

While GRCT has advanced our understanding of the gender gap in venture performance, a central argument of the theory can be further developed from an institutional perspective, namely, gender stereotypes are socially constructed; they embody normative expectations of desirable qualities and behavior for each gender (Eagly, 1987). Most GRCT research has overwhelmingly focused on dyadic interactions between entrepreneurs and resource providers (e.g., Eddleston et al., 2016; Kanze et al., 2018) and has thus ignored the institutional origins of gender stereotypes—specifically, social norms and cultural beliefs rooted in the macro institutional environment (Zhao & Wry, 2016). Moreover, the normative expectations of gender roles are not universally strong (Thebaud, 2015b; Zhao & Wry, 2016). Instead, gender stereotypes are variably salient across contexts as institutional roles and norms guide actors on how to perceive and enact gender differences (Ridgeway, 2011). Providing an institutional foundation for GRCT is thus important because both resource providers' biased evaluations and women entrepreneurs' internalization of gender stereotypes do not occur in a vacuum but are strongly embedded in and shaped by the macro institutional environment (Cobb et al., 2016; Zhao & Lounsbury, 2016; Zhao & Wry, 2016).

As a first step in developing the institutional foundation of GRCT, we integrate GRCT with recent developments in institutional theory from sociology to substantiate heterogeneous institutional contexts as sources of gender stereotypes of varying strengths. Sociological institutionalism has moved from an early focus on isomorphic pressures (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) to institutional heterogeneity and regional variations (Greenwood et al., 2010; Lee & Lounsbury, 2015; Wry & Zhao, 2018). According to this line of research, informal political-cultural institutions embedded in local political legacies and cultural traditions (Greenwood et al., 2010; Marquis & Lounsbury, 2007) provide normative guidelines and cognitive assumptions that serve to legitimize actors' cognition and behavior (Thornton et al., 2012). Because these informal institutions specify normative expectations and provide role scripts, they can be well integrated with GRCT to explain the origins of gender stereotypes. The emphasis on local political-cultural variations also allows us to examine gender stereotypes of varying strengths instead of assuming a homogeneous national culture (Hofstede, 1980), universally potent stereotypes, and isomorphic individual responses.

With this integrated framework, we ask two interrelated research questions: how do informal institutions shape stereotypes about gender roles and thus exert institutional effects on the gender gap in venture performance, and what are the mechanisms underlying these institutional effects? We examine entrepreneurial firms in China, where informal political-cultural institutions prevail (Zhou & Poppo, 2010) and the gender gap in venture performance persists (Tong, 2010). Specifically, we focus on two informal institutions: government interference in market-based competition and cultural beliefs in gender inequality. While the former entails political norms regarding entrepreneurs' investment of time and energy in building relationships with government officials, the latter reflects cultural beliefs about gender inequality in various social domains. Both institutions influence the strengths of gender stereotypes. Women entrepreneurs' political networking is less congruent with their gender roles when male government officials interfere in business operations (Egan et al., 2017; Tong, 2010), and cultural beliefs in gender inequality may encourage women to take on domestic roles and thus constrain

women from pursuing entrepreneurial endeavors (Fincher, 2014; Ning, 2008). While these stereotypes negatively impact women entrepreneurs' performance in general (Xiong et al., 2018), we expect the strength of gender stereotypes to vary across provinces that differ with respect to their political-cultural institutions (Raynard et al., 2013) in ways that enlarge or reduce the gender gap in venture performance.

We also explore two key entrepreneurial decisions that underpin these institutional effects—industry selection and after-work social activities. According to GRCT research, gender stereotypes shape entrepreneurs' career and life choices, including the industries in which they launch new ventures (Bird & Brush, 2002; Hebert, 2020) and the extent to which they engage in social activities outside of work to further their business objectives (Jennings & McDougald, 2007). We argue that both stronger local government interference and gender inequality beliefs amplify gender stereotypes, driving women entrepreneurs into lower-revenue yet more female gender-congruent industries and reducing their participation in after-work social activities. As a result, women's venture performance is reduced. These predictions are supported by an analysis of 7,626 Chinese entrepreneurial firms across 31 provinces between 2002 and 2008.

Our framework makes several contributions to the literature on gender and venture performance in the entrepreneurship field. First, providing an institutional foundation for GRCT is useful for addressing the criticism regarding the overly individualistic orientation of past women's entrepreneurship studies (Ahl, 2006; Brush et al., 2009). In linking macrolevel institutional environments and microlevel entrepreneurial choices, we contribute to the view that the gender gap in venture performance results from multilevel, multifaceted processes (Kim et al., 2016). Second, we highlight two entrepreneurial decisions—industry selection and after-work social activities—as unique mechanisms that underpin the broader institutional effects on the gender gap in venture performance. In highlighting institutional effects on these key entrepreneurial decisions, we further redress the view that associates women entrepreneurs' strategies to cope with industry selection and work-family conflicts with their individual characteristics, such as their psychological traits. Third, our findings help practitioners and policymakers gain a better understanding of societal-level root causes of the gender gap in venture performance and enable them to design more effective mechanisms for system-level changes instead of simply providing resources to women entrepreneurs.

## Theoretical Grounding

### Gender Role Congruity Theory

GRCT proposes that external stakeholders draw on pervasive cognitive shortcuts—namely, gender stereotypes—when evaluating performance in gendered contexts (Eagly & Karau, 2002; Heilman, 2001). Therefore, women face more challenges in gaining legitimacy and credibility in masculine fields (Powell & Eddleston, 2013) because the traditional gender roles assigned to females (e.g., caregiver) are viewed as incongruent with social contexts that value the more agentic traits typically associated with males (e.g., assertive, aggressive, and self-promoting).

Gender stereotypes in entrepreneurship significantly influence the cognition and behavior of both entrepreneurs and external stakeholders. Due to gender stereotypes, women (compared with men) are less likely to participate in entrepreneurial activities (Hughes & Jennings, 2015), assess their capabilities and the environment more pessimistically (Dempsey & Jennings, 2014; Thebaud, 2010), and have fewer preferences and intentions to become entrepreneurs (Gupta et al., 2008, 2009; Wieland et al., 2019). When being evaluated by external stakeholders, female entrepreneurs are judged based on standards that differ from those used to judge male entrepreneurs, making it more difficult for female entrepreneurs to signal and demonstrate their ventures'

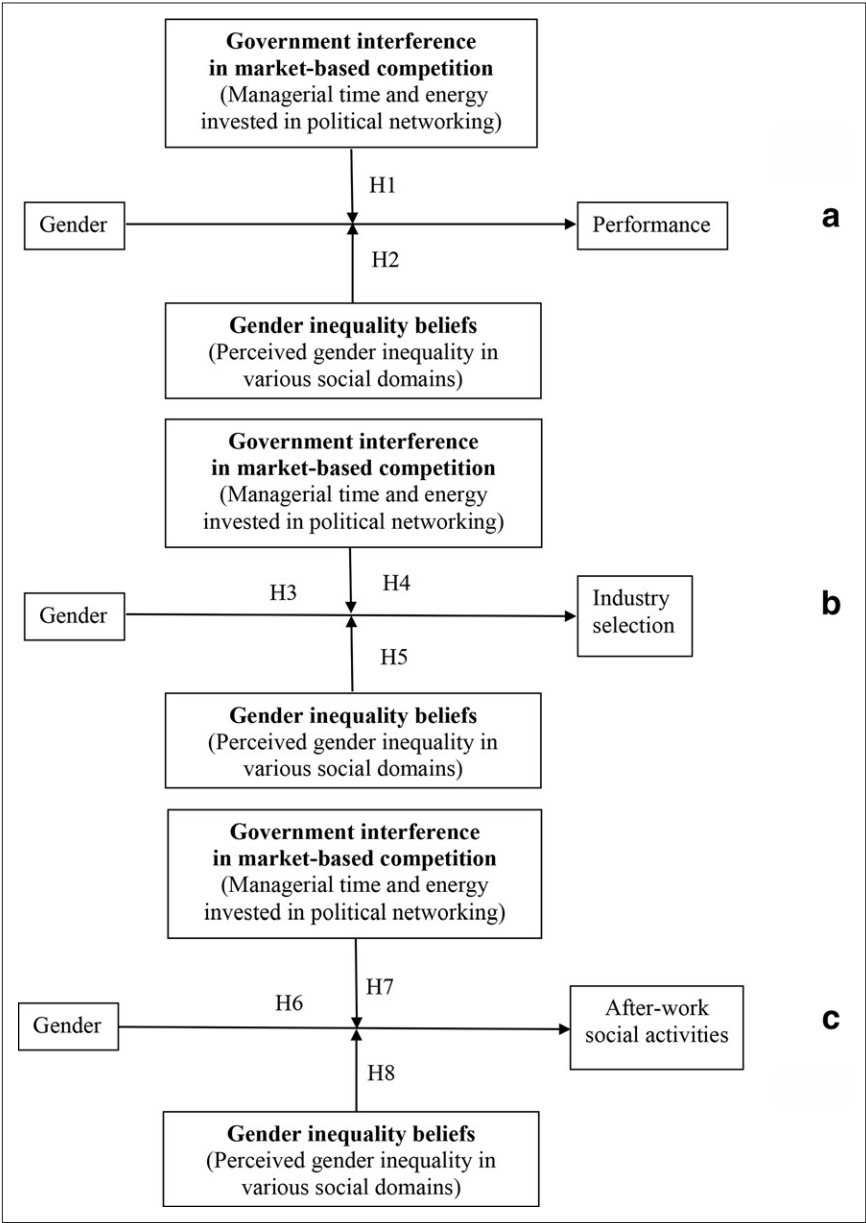
viability and quality (Eddleston et al., 2016; Kanze et al., 2018). Therefore, female-founded startups are less likely to raise equity financing in male-dominated sectors due to gender role incongruity (Hebert, 2020). Similarly, microstudies have demonstrated gendered rhetoric and cognitive scripts regarding the social construction of entrepreneurial potential when capital providers make funding decisions (Malmström et al., 2017, 2020). To overcome these barriers, women entrepreneurs tend to emphasize signals that are consistent with gender stereotypes when presenting their ventures (Lee & Huang, 2018). However, women who break gender stereotypes and take on masculine roles are likely to be discounted, subjected to scrutiny, or even punished (Gupta et al., 2018; Yang et al., 2020).

## **Integrating GRCT and Institutional Theory to Explain the Gender Gap in Venture Performance**

GRCT has significantly advanced our understanding of the gender gap in venture performance. However, one central argument in the original GRCT is underrepresented in contemporary research on women's entrepreneurship and thus needs scholarly attention and elaboration. That is, gender is a socially constructed notion (Gupta et al., 2009; Ridgeway, 2011), and gender stereotypes are socially and culturally defined prescriptions and beliefs regarding what constitutes appropriate behavior for men and women (Anselmi & Law, 1998; Malmström et al., 2017). Thus, gender stereotypes are strengthened (or weakened), and the perceived incongruence between women's gender roles and expected personal qualities of business entrepreneurs are amplified (or mitigated) depending on the contexts within which entrepreneurs are embedded (Thebaud, 2015b; Zhao & Wry, 2016).

An emerging line of research has paid attention to institutional contingencies that shape the gender gap in venture performance (Hughes et al., 2012; Klyver et al., 2013). However, past studies have primarily focused on formal national institutions, such as women's employment rights, work–family institutions, and labor market segregation (Thebaud, 2015b; Tonoyan et al., 2020). Thus, attention to how informal institutions (e.g., norms about women's participation in politics and cultural beliefs in gender inequality) shape the gender gap in venture performance remains limited (Brush et al., 2009; Klyver et al., 2013). The empirical settings in these past studies have mainly been economically developed countries with established institutions (Thebaud, 2015b; Tonoyan et al., 2020). However, formal institutions in emerging economies are often deficient, especially in countries that lack a mature legal system and independent professionalism (Dinc, 2005; Faccio, 2006; Haveman et al., 2017; Marquis & Raynard, 2015; Siegel, 2007). In these environments, entrepreneurs must rely on their knowledge of informal political–cultural institutions to navigate market uncertainties (Li & Zhang, 2007; Luo et al., 2020) and local contingencies (Raynard et al., 2013).

Institutional theory rooted in sociology focuses on how informal institutions in political, cultural, and social arenas serve to legitimize and direct actors' cognition and behavior (Scott, 2013). Prevailing norms and beliefs embedded in political–cultural institutions provide cognitive assumptions and behavioral guidelines for individuals and organizations (Thornton et al., 2012). For example, political norms define whether and how entrepreneurs' political networking can be legitimate, and cultural beliefs specify how to balance work and life in a socially acceptable manner. Departing from an early focus on isomorphic institutional pressures (DiMaggio & Powell, 1983; Meyer & Rowan, 1977), recent developments stress that political–cultural institutions are manifested heterogeneously across time and space (Greenwood et al., 2010; Lounsbury, 2007; Marquis & Lounsbury, 2007; Zhao & Li, 2019). Accordingly, local political norms and cultural legacies impose varied institutional constraints on individuals and organizations, eliciting heterogeneous instead of isomorphic responses (Lee & Lounsbury, 2015; Raynard et al., 2013).



**Figure 1.** Analytical framework.

These recent developments in institutional theory provide the basis for a meaningful integration with GRCT to explain the origins and strength of gender stereotypes across institutional contexts. With an integrated framework, we argue that the gender gap in venture performance is strongly shaped by two prevailing political-cultural institutions: (1) government interference in market-based competition, as reflected in managerial investment of time and energy in political relationship building, and (2) gender inequality beliefs, or widely shared beliefs of male versus female dominance in social domains. We propose that the two institutions vary in strength across

provinces, which in turn shapes the strengths of gender stereotypes. We further explore two microlevel mechanisms—industry selection and after-work social activities—that underpin these broad institutional effects. Our analytical framework is shown in Figure 1, which presents the key hypotheses to be developed in the next section.

## Hypothesis Development

### The Impact of Government Interference in Market-Based Competition on the Gender Gap in Venture Performance

Political networks are important for women entrepreneurs seeking to acquire information and resources, especially in emerging markets, where policies change quickly and officials control resources (Ge et al., 2019). When male politicians dominate the political arena and control resource allocation, gender stereotypes become particularly strong in interactions between entrepreneurs and government officials (Tong, 2010), especially in masculine social settings that involve drinking alcohol, smoking, and joking (Wank, 2001). Indeed, political norms generate and support gender stereotypes that differentially shape men's and women's political behavior. Previous studies have found that men are believed to be more competent and/or agentic than women in building and mobilizing their sociopolitical relationships (Correll & Ridgeway, 2003; Jennings & Niemi, 1981; Koenig & Eagly, 2014). Further exacerbating this disadvantage, female entrepreneurs who attempt to be more politically active are more likely to be perceived as engaging in political opportunism or even misconduct and are thus more likely to be punished than their male peers (Egan et al., 2017).

China's drastic marketization over the past four decades has generated uneven progress across provinces in terms of government–business relationships (Fan et al., 2009). In provinces where government interference is stronger, ventures face more risks and uncertainties as self-serving politicians and bureaucrats may expropriate private businesses for their own interests (Ge et al., 2017; Jia & Mayer, 2017). Entrepreneurs then need to spend a considerable amount of time and energy to deal with government departments and manage relationships with officials (Li & Zhang, 2007; Peng & Luo, 2000). Despite progress in women's participation in politics, the Chinese government remains a primarily masculine field. For instance, women have never been included in the standing committee of the Political Bureau of the Communist Party of China's Central Committee, China's highest decision-making body.<sup>1</sup> Female officials generally have less decision-making power than men, and high-profile female officials are mostly assigned to deputy positions (Ding et al., 2010). Because of male dominance in the political arena, in provinces where government interference in market-based competition is stronger, female entrepreneurs (compared with male entrepreneurs) are at a disadvantage when it comes to accessing information and resources through government bureaucrats, which contributes to a larger gender gap in venture performance. Accordingly, we propose the following:

***Hypothesis 1:** Stronger government interference in market-based competition in a province positively moderates the performance gap between male- and female-owned ventures.*

### The Impact of Gender Inequality Beliefs on the Gender Gap in Venture Performance

Deep-rooted gender beliefs embedded in cultural traditions define gender roles in various social domains, such as the family, workplaces, professions, and society at large (Inglehart & Norris,



2003; Zhao & Wry, 2016). Gender inequality beliefs play a salient role in entrepreneurship, which is traditionally viewed as a career for men and has been associated with stereotypically masculine traits (Bird & Brush, 2002; Malmström et al., 2017). Entrepreneurship is considered risky and time consuming and is thus discouraged for women, who are seen as less likely to succeed due to the challenges of balancing work and family responsibilities (Aldrich & Cliff, 2003; Cliff, 1998; Jennings & McDougald, 2007). The gender bias may distract women from being fully dedicated to their entrepreneurial pursuits and prevent them from garnering stakeholder support (Thébaud, 2015a). In particular, stakeholders may not perceive women as persistent and competent entrepreneurs due to gender stereotypes, and such gender bias may not be overcome by ensuring more female resource providers evaluate women-founded ventures (Kanze et al., 2018).

While China has come a long way in combating gender inequality and boosting women's status, gender inequality beliefs continue to exist and influence the Chinese society (Jiang, 2006). Most Chinese regard marriage and family as fundamental pillars of society, and the notion of men as breadwinners and women as housewives prevails (Ning, 2008; Sun, 2012). China has also experienced a resurgence of modern-day sexism in media campaigns, which humiliates women who resist familial pressures and fail to marry by their late 20s and views them as overly particular or somewhat flawed (also referred to as "leftover women"; Fincher, 2014; Wang, 2014). Such public discourse reinforces gender inequality beliefs and further intensifies the pressure placed on women to marry at a young age even if it costs them their careers and independence. Successful female entrepreneurs are often regarded as "strong women," and they endure social discrimination and misunderstandings from family members, workplace colleagues, and society. Therefore, gender inequality beliefs amplify gender stereotypes and compel women to prioritize family responsibilities over commitments to their new ventures. Women themselves may also accept and perpetuate gender stereotypes due to cognitive burdens and social sanctioning. Based on the 2010 wave of the China Women Social Status Survey (CWSSS), Li (2014) identified significant differences in career priorities within the family. Roughly 60% of respondents agreed that the husband's career development is more important than the wife's, and women agreed with this idea even more than men.

Despite generally held gender beliefs in China, the strength of these beliefs varies significantly across provinces. Evidence shows that there are enduring regional differences in gender inequality embedded in local cultures (Research Team of Indicators on Gender Equality and Women's Development in China, 2008). For instance, provinces in North China tend to have the strongest gender inequality beliefs followed by Northwest China and South China, with East, Central, and Southwest China being the least patriarchal (Du & Zhao, 2017; Gu & Xu, 1994). Past studies on the Chinese context have suggested that local cultures influence individual identification with gender-based social roles and thereby shape gender differences in risk preference, innovation, and competition (Xiong et al., 2018). In provinces with stronger gender inequality beliefs, we expect that gender stereotypes become more evident and that women face more constraints in their entrepreneurial pursuits than men (e.g., more significant work-family tensions), contributing to a larger gender gap in venture performance. Accordingly, we propose:

**Hypothesis 2:** *Stronger gender inequality beliefs in a province positively moderate the performance gap between male- and female-owned ventures.*

## Entrepreneurial Decisions as Mechanisms Underlying Institutional Effects

Entrepreneurial decisions reflect sociocognitive processes that are deeply shaped by norms and beliefs related to gender roles in the society. Facing heightened gender stereotypes and their associated risks and uncertainties in provinces with stronger government interference in market-based competition and greater gender inequality beliefs, female entrepreneurs may employ two coping mechanisms—selection into gender-congruent industries and reduced after-work social activities—which may in turn contribute to the gender gap in venture performance.

### Industry Selection

Industries vary in the extent to which they are perceived as congruent with male or female gender roles. Entrepreneurship in high-growth industries is often associated with stereotypically masculine traits, while entrepreneurship in low-growth areas, such as everyday mundane businesses or social entrepreneurship, is often associated with stereotypically feminine traits (Bendell et al., 2019; Gupta et al., 2019; Hebert, 2020; Marlow, 2002). Furthermore, women may internalize such gender stereotypes and have cognitive burdens that prevent them from pursuing their ambition in high-risk, high-growth industries (Wieland et al., 2019).

Such gender role congruity patterns with respect to industry are also relevant in China. According to a report by the China Women Entrepreneurs' Association (2017), female entrepreneurs are more concentrated in low-growth small businesses in the retail and service industries. Similarly, in our national sample of 7,626 private enterprises, male founders have a much higher representation than female founders in high-growth industries, such as manufacturing (90.4% male), finance (89.7% male), and science and technology (88.7% male). The top three industries in which women owners have the highest representation are accommodation and catering (26.0% female), information services (19.1% female), and retail (19.0% female). Due to gender role incongruity in male-dominated, high-growth sectors (Bendell et al., 2019; Hebert, 2020), women are less likely to choose these high-revenue industries when starting businesses. Therefore, we propose the following:

**Hypothesis 3:** *Male entrepreneurs are more likely than female entrepreneurs to start ventures in high-revenue industries than in low-revenue industries.*

In provinces where government interference in market-based competition is stronger, women entrepreneurs confront stronger gender stereotypes and thus are pushed to engage in coping strategies (Tong, 2010). In this case, we expect the gender differences in industry selection to be more salient. Specifically, women entrepreneurs are more likely to select into industries that are less financially appealing but have weaker gender stereotypes and lower risks of government expropriation. Low-revenue industries, such as retail and services, face less government control, whereas high-revenue industries, such as science and technology, manufacturing, and finance, are more capital intensive and rely more on government-controlled resources (e.g., licenses, land, and funding). As a result, these high-revenue industries have a relatively higher risk of government expropriation (Jia, 2014) and stronger reliance on government relationship building (Li & Zhang, 2007). In high-revenue industries, political networking is essential for overcoming high entry barriers (Luo & Liu, 2009) and buffering private firms in China from government expropriation (Zhang et al., 2016). Considering the challenging gender stereotypes about women's interactions with male-dominated government entities, female entrepreneurs are more likely than male entrepreneurs to start businesses in low-revenue industries that are less lucrative but experience less government interference, thereby reducing risks in their entrepreneurial pursuits.



Therefore, we expect the gender difference in terms of industry selection is larger in provinces where government interference in market-based competition is stronger. Accordingly, we propose:

**Hypothesis 4:** *Stronger government interference in market-based competition in a province positively moderates the gender gap between male and female entrepreneurs with respect to their probability of selecting into high-revenue industries.*

Moreover, in provinces with stronger gender inequality beliefs, women entrepreneurs may select into certain industries to cope with the stronger work–family tensions. High-growth industries, such as information and technology and finance, usually involve intensive work schedules and less flexibility than low-growth industries (Tong, 2010). Prior studies have suggested that women entrepreneurs are more likely to be segregated into industries (e.g., retail, food service, and personal care) that are less lucrative but afford them more autonomy when faced with strong work–family conflict (Marlow, 2002), and that they are less represented in more lucrative sectors, such as manufacturing, extraction, and business and financial services, that require more intensive and extended work schedules (China Women Entrepreneurs' Association, 2017; Loscocco & Bird, 2012; Thebaud, 2015b). In contrast, strong gender inequality beliefs may cause male entrepreneurs to be less committed to their family-caring roles and devote more time and energy to business-associated tasks, thus enabling them to pursue more aggressive and growth-oriented entrepreneurial activities (Jennings & McDougald, 2007; Rothbard & Edwards, 2003). As such, we propose the following:

**Hypothesis 5:** *Stronger gender inequality beliefs in a province positively moderate the gender gap between male and female entrepreneurs with respect to their probability of selecting into high-revenue industries.*

### **After-Work Social Activities**

Just as founding a startup in a high-revenue industry generally increases entrepreneurial performance, engaging in after-work social activities also tends to yield positive returns. Given that local governments control critical resources (e.g., land and permits) in China, the associated distortion of market principles requires firms to spend a substantial amount of time and energy building long-term relationships with government officials and staff in informal settings (Li & Zhang, 2007; Peng & Luo, 2000). This is especially true for entrepreneurial ventures characterized by unstable cash flows and vulnerable supply chain partnerships because they rely on resources and legitimacy from the government (Luo et al., 2020).

Despite the general benefits of engaging in after-work social activities, we expect male entrepreneurs to spend more time and energy on after-work social activities than their female counterparts. Furthermore, we expect this gender gap in time spent on after-work social activities to be particularly strong in provinces with stronger government interference in market-based competition for the following three reasons. First, instead of actively pursuing after-work social activities, female entrepreneurs may choose to shield themselves from interacting with government officials in social settings due to gender role incongruity in dealing with the male-dominated government (Tong, 2010). Second, there has been a revival of domestic role orientation among women in the post-Mao era due to the decline in state-sponsored feminism<sup>2</sup> (Li, 2005; Zuo, 2014). Thus, consistent with GRCT, we expect that female entrepreneurs may refrain from participating in after-work

social activities. This is likely to be particularly true in provinces with stronger government interference and intensified gender stereotypes. Third, also consistent with GRCT, when female entrepreneurs choose to break gender stereotypes and engage in after-work social activities, this violation of institutionalized gender roles in the political arena yields uncertain results and may even produce negative reactions among government officials, who are predominantly male (Egan et al., 2017). Accordingly, we propose:

**Hypothesis 6:** *Male entrepreneurs are more likely than female entrepreneurs to spend more time on after-work social activities.*

**Hypothesis 7:** *Stronger government interference in market-based competition in a province positively moderates the gender gap between male and female entrepreneurs in their time spent on after-work social activities.*

Similarly, in provinces with stronger gender inequality beliefs, to cope with stronger gender stereotypes and heightened work–family tensions, female entrepreneurs (relative to their male counterparts) may compromise their work schedule autonomy and flexibility to fulfill their gender role as the primary nurturer and caregiver in the family (Blair-Loy, 2003; Correll et al., 2007). Indeed, attending after-work social activities is often perceived as a counter-stereotypical action that violates gender expectations and provokes negative reactions (Eagly & Wood, 2012; Rudman & Fairchild, 2004). Furthermore, when female entrepreneurs try to reach out, family distractions may compromise their psychological and/or behavioral commitment to social activities (Rothbard, 2001). Therefore, compared with male entrepreneurs, female entrepreneurs are often obliged to reduce the time they spend on their businesses and social activities (Aldrich & Cliff, 2003; Cliff, 1998; Jennings & McDougald, 2007) even though such activities are critical for growing their businesses. Accordingly, we propose the following:

**Hypothesis 8:** *Stronger gender inequality beliefs in a province positively moderate the gender gap between male and female entrepreneurs in their time spent on after-work social activities.*

## Data and Methods

### Sample

To test our hypotheses, we collected firm- and owner-level data on a national sample of entrepreneurial firms in China from the Privately Owned Enterprises (POE) survey. The POE survey is a proprietary database jointly sponsored by the All-China Federation of Industry & Commerce (ACFIC) and the State Administration for Industry & Commerce (SAIC). It is a multiwave, nationwide survey that covers 0.1% of all registered POEs in each survey wave by employing a multistage stratified sampling process. In the first stage, a quota was assigned based on the National Statistics Bureau standard to ensure full coverage of all 31 Chinese provinces. In the second stage, POEs registered with the ACFIC and SAIC were randomly sampled by province and industry. By design, this survey identifies ventures owned and controlled by private and self-employed entrepreneurs and thus covers a national sample of entrepreneurial firms that emerged in the growing private sector during marketization (Ge et al., 2017; Zhou, 2013).

This database is well suited for our study because it is the primary data source available that systematically tracks entrepreneurial activities in China on a large scale and contains useful information on firm and owner characteristics. It is also increasingly used for scholarly publications in leading management and entrepreneurship journals (e.g., Ge et al., 2017; Ji et al., 2020;

**Table 1.** Distribution of Owner Gender by Province and Industry.

Province	Female	Male	Total	Industry	Female	Male	Total
Panel A				Panel B			
Beijing	62	269	331	Agriculture	35	323	358
Tianjin	20	145	165	Mining	10	73	83
Hebei	43	271	314	Manufacturing	263	2,469	2,732
Shanxi	17	125	142	Electricity, coal, gas, and water	4	60	64
Nei Mongol	25	100	125	Construction	21	305	326
Liaoning	62	257	319	Transportation	14	91	105
Jilin	12	82	94	Information service	45	191	236
Heilongjiang	52	137	189	Retail	325	1,383	1,708
Shanghai	137	630	767	Accommodation and catering	69	196	265
Jiangsu	109	815	924	Finance	15	130	145
Zhejiang	80	495	575	Real estate	57	384	441
Anhui	13	142	155	Rental service	29	142	171
Fujian	10	126	136	Science and technology	24	188	212
Jiangxi	28	168	196	Infrastructure	22	98	120
Shandong	57	468	525	Residential service	83	408	491
Henan	21	206	227	Education	4	19	23
Hubei	26	251	277	Health	7	30	37
Hunan	18	150	168	Entertainment and sports	21	71	92
Guangdong	61	570	631	Public administration	0	17	17
Guangxi	9	101	110	<i>Total</i>	1,048	6,578	7,626
Hainan	4	74	78				
Chongqing	38	174	212				
Sichuan	26	192	218				
Guizhou	22	107	129				
Yunnan	14	78	92				
Xizang	3	17	20				
Shaanxi	37	167	204				
Gansu	15	102	117				
Qinghai	5	24	29				
Ningxia	6	46	52				
Xinjiang	16	89	105				
<i>Total</i>	1,048	6,578	7,626				

Jia, 2014; Zhou, 2013), testifying to the quality of the data. For our empirical analysis, we obtained data from the 2002, 2004, 2006, and 2008 waves. We chose to focus on these four waves to ensure our key variables of interest are complete and comparable. Merging the four waves of POE datasets resulted in an original sample of 12,748 firms.<sup>3</sup> Cases with missing values on key variables (e.g., revenue, after-work social activities, and industry) were excluded.<sup>4</sup> The final sample for our analysis consisted of 7,626 entrepreneurial firms across 31 provinces in Mainland China. Panels A and B in Table 1 present the distribution of our sample by the owner's gender across the 31 provinces and 19 industries, respectively.

Province-level indicators of government interference in market-based competition and gender inequality beliefs were derived from two data sources: the National Economic Research Institute's (NERI) Indices of Market Development and the CWSSS. The NERI market development indices have been widely used to capture local variation in business–government relations, market development, and market-supporting institutions across provinces in China's marketization process (Jia, 2014; Jia & Mayer, 2017). The CWSSS is a multiwave survey conducted by the All-China Women's Federation and the National Bureau of Statistics of China in 1990, 2000, and 2010. During each wave of the survey, men and women from a nationally representative sample of families were interviewed to capture changes in their beliefs and attitudes regarding women's social status.

For our time frame, we collected province-level NERI data in the year preceding each of the four waves of the POE survey. Similarly, we used the 2000 wave of CWSSS data to extract province-level information on societal perceptions and cultural beliefs in gender differences. This approach ensured that the data for our key independent variables—government interference in market-based competition and gender inequality beliefs—were compiled before collecting venture performance data.

## Dependent and Independent Variables

Our dependent variable is the firm's yearly *revenue* (in 10,000 yuan; 1 yuan equals about U.S.\$0.125), which was log-transformed to adjust for its positive skewness (Tabachnick & Fidell, 2007). We have three key independent variables: the owner's gender, the strength of government interference in market-based competition at the province level, and the strength of gender inequality beliefs at the province level. We coded the owner's *gender* as a binary variable indicating whether the owner is male (1) or female (0) based on the POE survey data; this coding approach helped us capture the gender disparity between male and female entrepreneurs. We used data from the NERI indices to identify measures of informal political institutions that influence the gender gap in venture performance. The NERI indices include scores of *government interference in market-based competition*, which capture the extent to which business operations in a province are influenced by government interference according to managers' responses regarding the time and energy they invest on government relationship-building (Fan et al., 2009; Jia, 2014). The coding procedure is discussed in Appendix 1.

We identified measures of cultural beliefs in gender differences from the 2000 wave of CWSSS data. Specifically, we constructed a multidimensional *gender inequality beliefs* variable comprising three items that respectively capture perceived gender gaps in government leadership positions, the division of housework, and sexism in society. We selected these items because they reflect perceived gender inequalities in various societal domains, such as the family and the state. Appendix 1 lists the survey questions and possible responses that correspond to the three items. For each item, we first recoded individual responses to the corresponding survey question as an ordinal variable ranging from  $-1$  to  $1$ , with  $1$  indicating perceived male dominance for that item,  $0$  indicating that men and women are perceived as equal, and  $-1$  indicating perceived female dominance for the item. We then aggregated individual responses to obtain a province-level average for each item. Next, we ran a principal component factor analysis to generate an index of gender inequality beliefs. As expected, all three components loaded significantly on one underlying common factor (LR test  $\chi^2(3) = 12,000.00, p < .000$ ).

## Underpinning Mechanisms

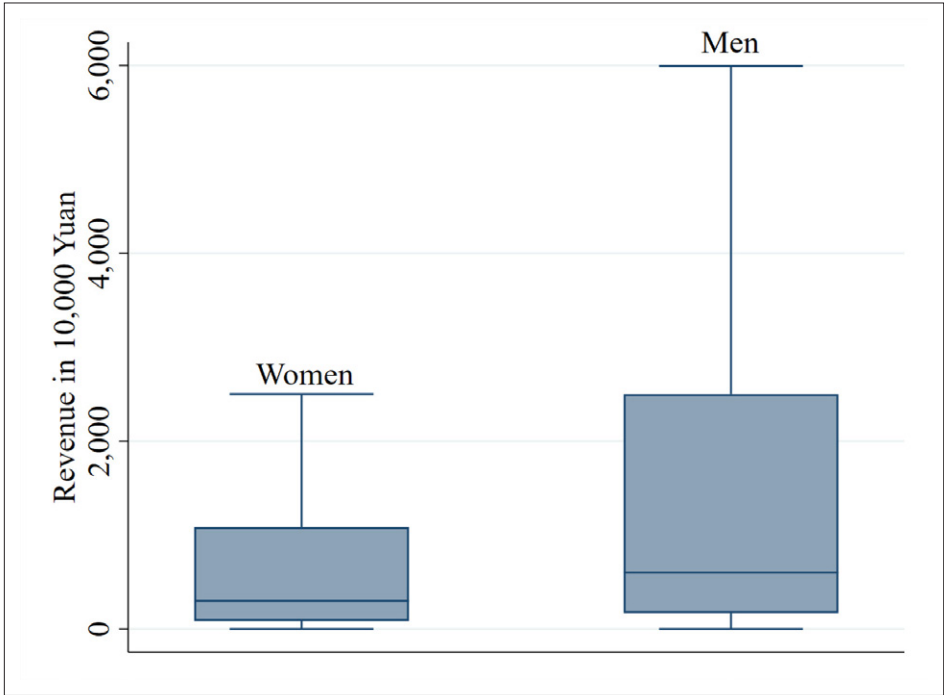
As theorized, the gender gap in venture performance results from different industry selection choices and after-work social activities between male and female entrepreneurs. We gathered data from the POE survey to capture these two key mechanisms. Using the original 19 industries according to the National Statistics Bureau standard, we classified a firm's industry affiliation into *high-revenue industry* or *low-revenue industry* based on whether the industry's median revenue is above or below the median revenue of all firms in the original full sample. We measured firm owners' *after-work social activities* as the time (hours per day) they spent on external relations and social networking.

## Control Variables

We included a set of control variables that capture differences in entrepreneurs' characteristics and initial resource endowments. We included demographic variables, including owner *age* (in number of years) and owner *education* (0 = high school and below; 1 = college and above). Previous research has demonstrated the impact of entrepreneurs' career experience on venture performance (Stuart & Abetti, 1990). Thus, we also controlled for two dummy variables—*startup experience* and *government experience*—which indicate whether an owner has past entrepreneurial experience starting a new venture and experience in government service, respectively. In addition, we included a dummy variable indicating whether a firm owner is an National People's Congress (NPC)/Chinese People's Political Consultative Conference (CPPCC) *member* as a proxy for the owner's political connection. The NPC and the CPPCC are China's two major political councils. Entrepreneurs' self-perceived status may also affect venture performance. When coding a startup owner's *self-perceived status*, we relied on the original POE survey questionnaire in which interviewers asked about owners' self-perceived political, economic, and social statuses. As these three types of self-perceived status are highly correlated, we used the self-perceived social status score as our measure<sup>5</sup>; a higher value of this measure means higher self-perceived status by an owner.

An entrepreneur's family responsibility may affect his or her motivation for and dedication to entrepreneurship. Accordingly, we controlled for family responsibilities using two indicators: family size and breadwinner. *Family size* refers to the number of family members living with an entrepreneur, whereas *breadwinner* is a binary variable indicating whether an entrepreneur contributes more than 50% to his or her family's income. An initial endowment of financial resources is critical for a venture's success. Thus, we controlled for two dummy variables—*bank loans* and *family and friends fund*—which indicate whether an owner obtained any bank loans and/or financial support from family and friends, respectively, when founding his or her venture.

At the firm level, we controlled for *firm age* (number of years since founding), *firm size* (logged number of employees), and *industry fixed effects*. Including a province dummy was not feasible because some key independent variables (e.g., gender inequality beliefs) are coded at the provincial level yet they are constant. However, we accounted for province-level variations using two steps. First, we controlled for the logarithm of the province's gross domestic product (GDP; in billion yuan) collected from the China Statistical Yearbook. Second, we controlled for potential regional variations by including dummy variables that indicate three broad *regions*—namely, east, middle, and west—as defined by the National Bureau of Statistics of China. Finally, we included *survey-wave fixed effects* to control for unobserved wave-specific factors.



**Figure 2.** The gender gap in venture performance.

Findings

We first demonstrate the gender gap in venture performance using a box plot. As shown in Figure 2, male entrepreneurs outperform female entrepreneurs in our sample. Then, we formally estimate the extent to which the gender effect varies with province-level institutional context in shaping venture performance (ordinary least squares [OLS] regressions), entrepreneurs’ industry selection (logistic regressions), and after-work social activities (OLS regressions). Table 2 reports summary statistics for the key variables used in our analysis. To assess the potential for multicollinearity that could bias our regression results, we checked variance inflation factor scores in each model; all were well below the threshold value of 10.

In Table 3, we present the results of the regression models that estimate how gender, government interference in market-based competition, and gender inequality beliefs affect venture performance. Model 1 demonstrates that male entrepreneurs significantly outperform their female counterparts ( $\beta = .21, p = .000$ ). On average, firms owned by male entrepreneurs outperform firms owned by female entrepreneurs equipped with similar initial resources by about 23.37%. In Models 2 and 3, we test the impact of government interference in market-based competition on ventures owned by male and female entrepreneurs. Model 2 shows that government interference in market-based competition is generally harmful to venture performance ( $\beta = -.06, p = .000$ ). Model 3 further tests and supports Hypothesis 1; that is, male entrepreneurs benefit more than female entrepreneurs in provinces with stronger government interference in market-based competition ( $\beta = .05, p = .000$ ). Specifically, our results suggest that on average, a male-owned firm outperforms a female-owned firm by 91.27% in the province with the maximum level of government interference in market-based competition. However, in the province with the



Table 2. Descriptive Statistics and Correlation Matrix of Key Variables.

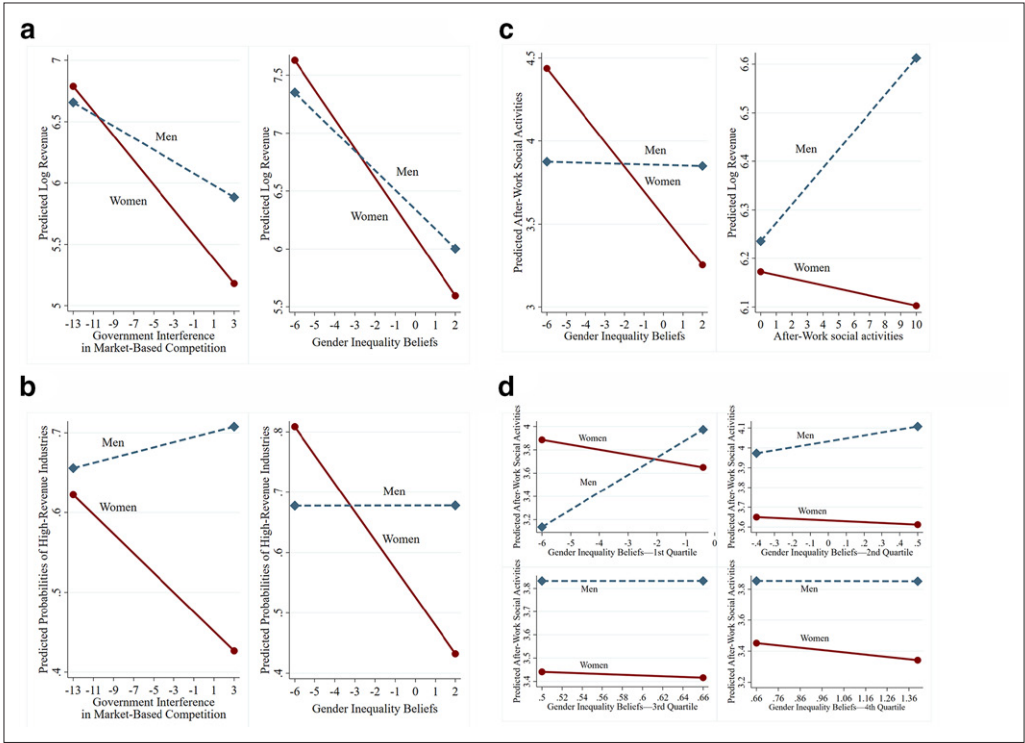
Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1 Revenue	6.30	2.09	1.00																		
2 High-revenue industry	0.66	0.47	0.25	1.00																	
3 After-work social activities	3.82	2.06	0.12	0.10	1.00																
4 Owner age	44.17	8.18	0.07	0.13	-0.08	1.00															
5 Owner education	0.42	0.49	0.06	-0.00	-0.01	-0.03	1.00														
6 Owner startup experience	0.22	0.41	-0.05	-0.03	0.05	-0.05	-0.11	1.00													
7 Owner government experience	0.16	0.36	0.05	0.01	0.04	0.08	0.10	-0.14	1.00												
8 NPC/CPPCC member	0.44	0.50	0.31	0.15	0.14	0.13	-0.01	0.03	0.06	1.00											
9 Self-perceived status	5.74	1.58	0.26	0.13	0.08	0.07	0.01	0.05	0.03	0.27	1.00										
10 Family size	3.97	1.89	0.05	0.08	0.00	0.10	-0.07	0.12	-0.07	0.10	0.07	1.00									
11 Breadwinner	0.87	0.33	0.04	0.00	0.02	-0.07	0.02	-0.03	0.03	0.00	0.03	-0.19	1.00								
12 Bank loans	0.26	0.44	0.05	0.05	-0.00	0.03	-0.03	0.02	0.00	0.08	0.06	0.06	-0.01	1.00							
13 Family and friends fund	0.11	0.31	-0.05	-0.04	0.01	-0.05	0.01	-0.03	0.02	-0.04	-0.03	-0.01	0.02	-0.01	1.00						
14 Firm age	9.27	5.17	0.20	0.12	0.11	0.25	-0.06	0.09	-0.02	0.29	0.16	0.13	-0.03	0.00	-0.00	1.00					
15 Firm size	3.87	1.49	0.68	0.32	0.17	0.09	0.03	0.01	0.04	0.39	0.30	0.12	0.04	0.07	-0.04	0.28	1.00				
16 Province GDP	6.60	0.85	0.10	0.02	-0.14	0.01	-0.01	-0.07	-0.05	-0.08	-0.01	-0.05	0.01	0.02	-0.02	-0.11	-0.01	1.00			
17 Gender	0.86	0.34	0.12	0.15	0.09	0.06	-0.03	0.03	0.00	0.06	0.05	0.07	0.08	0.04	-0.03	0.10	0.13	-0.00	1.00		
18 Government interference	-6.32	3.31	-0.11	-0.00	0.11	-0.04	-0.00	0.09	0.06	0.12	0.04	0.02	0.00	0.05	0.02	0.04	0.02	-0.57	0.01	1.00	
19 Gender inequality beliefs	0.02	0.99	-0.01	0.02	0.02	-0.02	-0.04	0.07	-0.02	0.14	0.10	0.09	0.01	0.11	0.01	0.04	0.09	0.08	0.05	0.37	1.00

Note. N = 7,626. Correlations with a magnitude larger than |0.02| are significant at the  $p < 0.05$  level, two-tailed test. Statistics on industry, region, and survey-wave dummies are not reported. CPPCC = Chinese People's Political Consultative Conference; GDP = gross domestic product; NPC = National People's Congress.

**Table 3.** OLS Regression Models Estimating the Effects of Gender, Government Interference, and Gender Inequality Beliefs on Venture Performance.

	Model 1	Model 2	Model 3	Model 4	Model 5
Age	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Education	0.13*** (0.04)	0.12*** (0.03)	0.12*** (0.03)	0.13*** (0.03)	0.13*** (0.03)
Startup experience	-0.20*** (0.04)	-0.18*** (0.04)	-0.19*** (0.04)	-0.18*** (0.04)	-0.18*** (0.04)
Government experience	0.16** (0.05)	0.16*** (0.05)	0.16*** (0.05)	0.15** (0.05)	0.15** (0.05)
NPC/CPPCC member	0.23*** (0.04)	0.24*** (0.04)	0.24*** (0.04)	0.26*** (0.04)	0.26*** (0.04)
Self-perceived status	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.07*** (0.01)
Family size	-0.02* (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.01 (0.01)	-0.01 (0.01)
Breadwinner	0.02 (0.05)	0.02 (0.05)	0.02 (0.05)	0.03 (0.05)	0.03 (0.05)
Bank loans	0.01 (0.04)	0.02 (0.04)	0.02 (0.04)	0.04 (0.04)	0.04 (0.04)
Family and friends fund	-0.13* (0.05)	-0.12* (0.05)	-0.12* (0.05)	-0.11* (0.05)	-0.11* (0.05)
Firm age	0.01** (0.00)	0.01* (0.00)	0.01* (0.00)	0.01** (0.00)	0.01** (0.00)
Firm size	0.92*** (0.01)	0.92*** (0.01)	0.92*** (0.01)	0.92*** (0.01)	0.92*** (0.01)
Province GDP	0.13*** (0.03)	0.08* (0.03)	0.08* (0.03)	0.22*** (0.03)	0.22*** (0.03)
Gender	0.21*** (0.05)	0.21*** (0.05)	0.54*** (0.11)	0.23*** (0.05)	0.24*** (0.05)
Government interference		-0.06*** (0.01)	-0.10*** (0.01)		
Gender x Government interference			0.05*** (0.01)	-0.18*** (0.02)	-0.25*** (0.04)
Gender inequality beliefs					0.08 <sup>+</sup> (0.05)
Gender x Gender inequality beliefs					0.38 (0.26)
Constant	1.06*** (0.26)	1.07*** (0.25)	0.78** (0.27)	0.39 (0.26)	7,626
N	7,626	7,626	7,626	7,626	7,626
Log likelihood	-13,729.58	-13,699.71	-13,693.60	-13,680.28	-13,678.55
R <sup>2</sup>	0.51	0.51	0.51	0.51	0.51

Note: Significance levels: <sup>+</sup> .10, \* .05, \*\* .01, \*\*\* .001, two-tailed test. Standard errors are in parentheses. Industry, region, and survey-wave fixed effects are included. CPPCC = Chinese People's Political Consultative Conference; GDP = gross domestic product; NPC = National People's Congress; OLS = ordinary least squares.



**Figure 3.** Plots of significant interaction effects. a. How government interference and gender inequality beliefs shape the gender gap in venture performance. b. How government interference and gender inequality beliefs shape the gender gap in industry selection. c. How gender inequality beliefs shape the gender gap in after-work social activities and the gendered effects of after-work social activities on venture performance. d. How gender inequality beliefs (by quartiles of provinces) shape the gender gap in after-work social activities.

minimum level of government interference, female-owned ventures outperform male-owned ventures by 9.80% on average.

In Models 4 and 5, we examine the impact of gender inequality beliefs on venture performance and how this varies between male- and female-owned firms. The results of Model 4 show that gender inequality beliefs are negatively and significantly associated with firm revenue ( $\beta = -.18, p = .000$ ). This finding is remarkable because it indicates that regardless of the owner's gender, firm performance is lower in provinces with stronger gender inequality beliefs. Furthermore, consistent with Hypothesis 2, firms owned by female entrepreneurs suffer more than those owned by male entrepreneurs (see Model 5:  $\beta = .08, p = .064$ ) because gender inequality beliefs impose significant biases and barriers on female owners. Thus, they are distracted from their entrepreneurial pursuits, which compromises their ventures' success. Male-owned ventures on average outperform female-owned ventures by 42.09% in the province with the maximum level of gender inequality beliefs, whereas in the province with the minimum level of gender inequality beliefs, female-owned ventures outperform male-owned ones by 19.62%.

In Figure 3a, we plot the significant interactions based on Models 3 and 5 in Table 3. Notably, the gender gap in venture performance can be significantly reduced or even reversed when government interference and gender inequality beliefs are sufficiently low. Therefore, the gender gap is not unconquerable despite being repressive.

**Table 4.** Logistic Regression Models Estimating the Effects of Gender, Government Interference, and Gender Inequality Beliefs on Selection Into High-Revenue Industries.

	Model 1	Model 2	Model 3
Age	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)
Education	-0.05 (0.05)	-0.05 (0.05)	-0.04 (0.05)
Startup experience	-0.26*** (0.06)	-0.27*** (0.07)	-0.26*** (0.07)
Government experience	-0.20** (0.08)	-0.20** (0.08)	-0.20** (0.08)
NPC/CPPCC member	0.04 (0.06)	0.04 (0.06)	0.04 (0.06)
Self-perceived status	0.03 <sup>+</sup> (0.02)	0.03 <sup>+</sup> (0.02)	0.04* (0.02)
Family size	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)
Breadwinner	-0.08 (0.08)	-0.08 (0.08)	-0.08 (0.08)
Bank loans	0.14* (0.06)	0.14* (0.06)	0.15* (0.06)
Family and friends fund	-0.17* (0.08)	-0.17* (0.08)	-0.16* (0.08)
Firm age	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Firm size	0.47*** (0.02)	0.47*** (0.02)	0.47*** (0.02)
Province GDP	0.06 (0.05)	0.07 (0.05)	0.09 <sup>+</sup> (0.05)
Gender	0.65*** (0.07)	1.13*** (0.16)	0.68*** (0.07)
Government interference		-0.06** (0.02)	
Gender × Government interference		0.07*** (0.02)	
Gender inequality beliefs			-0.24*** (0.06)
Gender × Gender inequality beliefs			0.24*** (0.07)
Constant	-3.41*** (0.38)	-3.82*** (0.40)	-3.60*** (0.40)
N	7,626	7,626	7,626
Log likelihood	-4,353.74	-4,347.95	-4,346.04

Note. Significance levels: <sup>+</sup>.10, \*.05, \*\*.01, \*\*\*.001, two-tailed test. Standard errors are in parentheses. Region and survey-wave fixed effects are included. CPPCC = Chinese People's Political Consultative Conference; GDP = gross domestic product; NPC = National People's Congress.

Table 4 presents the results of the models that estimate industry selection. The results of Model 1 show that male entrepreneurs are more likely to select into high-revenue industries as compared to female entrepreneurs ( $\beta = .65, p = .000$ ), supporting Hypothesis 3. Specifically, the odds of male entrepreneurs founding startups in high-revenue industries is 1.92 times that of female entrepreneurs. Model 2 shows that this difference is more pronounced in provinces with stronger government interference in market-based competition ( $\beta = .07, p = .001$ ), supporting Hypothesis 4. Specifically, the odds of male entrepreneurs founding startups in high-revenue industries is 3.60 (vs 1.28) times that of female entrepreneurs in the province with the highest level of (versus the lowest level of) government interference in market-based competition. Figure 3b (left) shows the plot of the interaction effect on predicted probabilities.

The results of Model 3 show that the gender gap in selecting into high-revenue industries is amplified in provinces with stronger gender inequality beliefs ( $\beta = .24, p = .000$ ), supporting Hypothesis 5. The odds of male entrepreneurs founding startups in high-revenue industries is 2.76 times that of female entrepreneurs in the province with the highest level of gender inequality beliefs. In contrast, the odds of male entrepreneurs founding startups in high-revenue industries is 0.56 times that of female entrepreneurs in the province with the lowest level of gender inequality beliefs. Figure 3b (right) illustrates this interaction effect.

**Table 5.** OLS Regression Models Estimating the Effects of Gender, Government Interference, and Gender Inequality Beliefs on After-Work Social Activities.

	Model 1	Model 2	Model 3
Age	-0.02*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)
Education	-0.04 (0.05)	-0.04 (0.05)	-0.04 (0.05)
Startup experience	0.04 (0.06)	0.04 (0.06)	0.04 (0.06)
Government experience	0.12 <sup>+</sup> (0.07)	0.12 <sup>+</sup> (0.07)	0.12 <sup>+</sup> (0.07)
NPC/CPPCC member	0.28*** (0.05)	0.28*** (0.05)	0.28*** (0.05)
Self-perceived status	0.03 <sup>+</sup> (0.02)	0.03 <sup>+</sup> (0.02)	0.03 <sup>+</sup> (0.02)
Family size	-0.02 (0.01)	-0.02 (0.01)	-0.01 (0.01)
Breadwinner	-0.01 (0.07)	-0.01 (0.07)	-0.00 (0.07)
Bank loans	0.03 (0.05)	0.03 (0.05)	0.03 (0.05)
Family and friends fund	0.00 (0.08)	0.00 (0.08)	0.00 (0.08)
Firm age	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Firm size	0.15*** (0.02)	0.15*** (0.02)	0.15*** (0.02)
Province GDP	0.01 (0.04)	0.01 (0.05)	0.02 (0.05)
Gender	0.29*** (0.07)	0.46*** (0.16)	0.31*** (0.07)
Government interference		-0.03 (0.02)	
Gender × Government interference		0.02 (0.02)	
Gender inequality beliefs			-0.15* (0.06)
Gender × Gender inequality beliefs			0.14* (0.07)
Constant	4.70*** (0.36)	4.56*** (0.38)	4.60*** (0.37)
N	6,445	6,445	6,445
Log likelihood	-13,230.69	-13,229.89	-13,227.76
R <sup>2</sup>	0.16	0.16	0.16

Note. Significance levels: <sup>+</sup>.10, \*.05, \*\*.01, \*\*\*.001, two-tailed test. Standard errors are in parentheses. Industry, region, and survey-wave fixed effects are included. CPPCC = Chinese People's Political Consultative Conference; GDP = gross domestic product; NPC = National People's Congress; OLS = ordinary least squares.

In Table 5, we present the results of the models that estimate how gender, government interference in market-based competition, and gender inequality beliefs affect entrepreneurs' after-work social activities. The results of Model 1 indicate that on average, male entrepreneurs engage in more after-work social activities than female entrepreneurs ( $\beta = .29, p = .000$ ), supporting Hypothesis 6. Specifically, male entrepreneurs spend 0.29 more hours per day on after-work social activities than their female counterparts. However, as shown in Model 2, this gender difference is not significantly greater in provinces where there is a higher level of government interference in market-based competition ( $\beta = .02, p = .241$ ); thus, Hypothesis 7 is not supported. The results of Model 3 suggest that gender inequality beliefs amplify the gender gap in after-work social activities ( $\beta = .14, p = .028$ ), thus supporting Hypothesis 8. On average, male entrepreneurs spend 0.50 more hours on after-work social activities than female entrepreneurs in the province with the highest level of gender inequality beliefs. In contrast, on average, female entrepreneurs spend 0.42 more hours on after-work social activities than male entrepreneurs in the province with the lowest level of gender inequality beliefs. Figure 3c (left) illustrates this interaction effect.

## Robustness Checks

### **Alternate Dependent Variables**

Government interference in market-based competition and gender inequality beliefs may affect both revenue and the cost of business operations. Therefore, in lieu of revenue, we used *net income*—computed as the excess of all revenue over all expenses in a given fiscal year—as an alternate dependent variable, which generated largely consistent results, although the sample was significantly reduced due to missing values. In addition, we used *productivity*, measured as revenue per employee, as a third performance measure. The results are again consistent with our main findings.

### **Alternate Explanatory Variables and Mechanisms**

Government interference in market-based competition may be intertwined with the development of the legal and institutional environment of a province. Thus, we replaced government interference in market-based competition with an alternate proxy from the NERI indices—*development of intermediary and legal services*—which is an aggregated measure created based on the number of lawyers and accountants in a province, the development of industry associations, intellectual property protection, and producer and consumer rights protection (Fan et al., 2009). More developed intermediary and legal services in a province indicate a more mature legal and institutional environment, which in turn facilitates transparent market transactions and effective legal enforcement. As expected, this proxy is strongly and negatively correlated with the original government interference measure ( $-0.85$ ). Our findings remain robust using this alternate variable. The gender gap is lower in provinces with more mature and established legal and institutional environments.

Although our findings suggest that reduced government interference in market-based competition helps narrow the gender gap, the effect may be a byproduct of economic development. In other words, a province's overall economic development may be the contributing factor that helps reduce the gender gap. To address this potentially confounding mechanism, we tested an additional interaction term between the owner's gender and provincial GDP (in logarithm). The coefficient of this interaction term is insignificant, suggesting that it is the strength of government interference in market-based competition (not the level of economic development) in a province that influences the gender gap in venture performance.

### **Alternate Measurement Approaches**

In the main analysis, we classified 19 original industries into 2 categories to highlight gender role congruity in the context of high- versus low-revenue industries. For this analysis, high revenue is defined as annual revenue of 8–20 million yuan, and low revenue is defined as annual revenue of 2.3–6.2 million yuan based on the median revenue of all firms in the original sample (6.5 million yuan). Some industries that are above the median value and are therefore classified as high revenue are close to other industries that are below the median in terms of absolute revenue level. To mitigate this concern, we used ordered logistic regressions to test an alternative dependent variable—*industry revenue quartiles*—an ordinal variable ranging from 1 to 4 based on four quartiles of the entire revenue range. This fine-tuned approach based on industry revenue quartiles generated results consistent with our main findings based on the high- versus low-revenue industry classification.

## Supplementary Analyses for After-Work Social Activities

While startups in high-revenue industries generally perform better than those in low-revenue industries, whether or not a founder's involvement in after-work social activities positively affects returns is less intuitive. In this section, we demonstrate the effect of after-work social activities on venture performance as well as gender-based patterns in participating in after-work social activities across



**Table 6.** OLS Regression Models Estimating the Effects of Gender and After-Work Social Activities on Venture Performance.

	Model 1	Model 2
Age	−0.00 (0.00)	−0.00 (0.00)
Education	0.07 <sup>+</sup> (0.04)	0.07 <sup>+</sup> (0.04)
Startup experience	−0.21*** (0.05)	−0.21*** (0.05)
Government experience	0.17** (0.05)	0.17** (0.05)
NPC/CPPCC member	0.24*** (0.04)	0.24*** (0.04)
Self-perceived status	0.07*** (0.01)	0.07*** (0.01)
Family size	−0.02 <sup>+</sup> (0.01)	−0.02 <sup>+</sup> (0.01)
Breadwinner	0.03 (0.06)	0.03 (0.06)
Bank loans	−0.02 (0.04)	−0.02 (0.04)
Family and friends fund	−0.12 <sup>+</sup> (0.06)	−0.12 <sup>+</sup> (0.06)
Firm age	0.01* (0.00)	0.01* (0.00)
Firm size	0.93*** (0.01)	0.93*** (0.01)
Province GDP	0.13*** (0.03)	0.13*** (0.03)
Gender	0.22*** (0.05)	0.06 (0.11)
After-work social activities	0.03*** (0.01)	−0.01 (0.03)
Gender × After-work social activities		0.04 <sup>+</sup> (0.03)
Constant	0.91** (0.29)	1.04*** (0.30)
N	6,445	6,445
Log likelihood	−11,595.65	−11,594.26
R <sup>2</sup>	0.52	0.52

Note. Significance levels: <sup>+</sup>.10, \*.05, \*\*.01, \*\*\*.001, two-tailed test. Standard errors are in parentheses. Industry, region, and survey-wave fixed effects are included. CPPCC = Chinese People’s Political Consultative Conference; GDP = gross domestic product; NPC = National People’s Congress; OLS = ordinary least squares.

different levels of gender inequality beliefs. As shown in Model 1 in Table 6, engaging in after-work social activities yields positive returns for venture performance ( $\beta = .03, p = .001$ ). The results of Model 2 suggest that male entrepreneurs benefit more than female entrepreneurs who spend the same amount of time on such activities ( $\beta = .04, p = .097$ ). For each additional hour (per day) spent on after-work social activities, male entrepreneurs earn an additional 11,052 yuan in yearly revenue compared to female entrepreneurs. Figure 3c (right) illustrates this interaction effect.

As we theorized, gender stereotypes originating within institutional contexts vary in strength due to institutional heterogeneity. Thus, gender stereotypes are not universally potent and can be reversed in certain institutional contexts. For example, some provinces encourage women to engage in after-work social activities, while others have a more constrained setting that discourages or discounts such activities. To further highlight these patterns, we divided the 31 provinces covered by our data into 4 quartiles ranging from low to high in terms of their scores on gender inequality beliefs (these patterns are presented in Figure 3d). In the first quartile, which includes those provinces with very low gender inequality beliefs, the institutional context seems to enable women’s engagement in after-work social activities; however, in the other three quartiles, female entrepreneurs significantly lag behind their male counterparts in after-work social activities. This implies that entrepreneurs need to understand their local institutional contexts before investing in after-work socializing. We discuss the institutional effects on specific types of after-work social activities in the “Limitations and Suggestions for Future Research” section.

## Discussion and Conclusion

In providing an institutional foundation for GRCT, we go beyond the dyadic relationships between entrepreneurs and resource providers (Eddleston et al., 2016; Kanze et al., 2018; Malmström et al., 2017) and examine broader informal institutions as sources of gender stereotypes. Exploring institutional heterogeneity across local contexts allows us to theorize about gender stereotypes of varying intensity instead of seeing stereotypes as universally potent and irreversible. Furthermore, we link macrolevel institutional contexts with microlevel entrepreneurial choices. We point out that varying gender stereotypes embedded in political norms and cultural beliefs guide key entrepreneurial decisions and thereby enlarge or reduce the gender gap in venture performance. In particular, we show that higher levels of government interference and stronger gender inequality beliefs in a province may strengthen gender stereotypes and compel women entrepreneurs to select into less profitable yet more female gender-congruent industries and may also reduce women entrepreneurs' participation in and the effectiveness of after-work social activities, both of which contribute to an amplified gender gap in venture performance. These findings have important implications for research on women's entrepreneurship and for practitioners seeking to fill the gender gap in venture performance.

## Implications for Research on Women's Entrepreneurship

By theorizing about the institutional effects on gender stereotypes and linking these institutional effects to entrepreneurial decisions, we offer a more comprehensive framework for explaining the gender gap in venture performance. This multilevel framework significantly contributes to women's entrepreneurship research and policy prescriptions, which have been criticized for their highly individualistic orientation and limited attention to contextual and historical contingencies (Ahl, 2006; Hughes et al., 2012; OECD, 2012). For example, Ahl (2006, p. 605) questioned the individualistic orientation of women's entrepreneurship studies and voiced the concern that "contextual and historical variables ... such as legislation, culture, or politics are seldom discussed." If scholars only focus on the individual characteristics of women entrepreneurs, they are likely to overlook novel insights into the societal-level root causes of the gender gap in entrepreneurship. Our study highlights how certain political-cultural institutional contexts can either enable or constrain entrepreneurial success. In doing so, it joins recent research by others (e.g., Brush et al., 2009; Thebaud, 2015b; Welter et al., 2006) that has drawn attention to important institutional contingencies for understanding the persistent gender gap in venture performance.

Furthermore, our theory on the two microlevel mechanisms—namely, industry selection and after-work social activities—indicates how macro institutional effects manifest in entrepreneurs' key career and life decisions. When the institutional effects on entrepreneurial decisions are not fully considered, women entrepreneurs may be blamed for selecting into low-growth industries or avoiding after-work social activities due to their intrinsic values or psychological traits. Instead, we argue that strong gender stereotypes regarding political behavior and work-family conflicts originating from political-cultural contexts, which female entrepreneurs face more than male entrepreneurs, translate into certain coping strategies (e.g., women's selection into low-revenue industries and reduced participation in after-work social activities) that reinforce the gender gap in venture performance. Our findings suggest that these microlevel mechanisms are embedded in and shaped by broader political-cultural institutions that variably strengthen gender roles and amplify women entrepreneurs' work-family tensions. As a result, the gender gap in venture performance is better viewed as resulting from multilevel, multifaceted processes that relate to political institutions, cultural beliefs, and individual experiences (Kim et al., 2016).

In addition, while the majority of research on female entrepreneurship is influenced by institutional economics (North, 1990) and has focused on formal institutions situated in developed countries, few studies have examined women-owned businesses in the context of developing countries (Lerner et al., 1997). This is an important oversight because on average, gender inequality is a more evident challenge in developing countries, and female entrepreneurship has been considered a useful tool for liberating women and addressing deep-rooted gender discrimination in traditional labor markets (Hughes et al., 2012; Rindova et al., 2009; Zhao & Wry, 2016). Moreover, most research showing that entrepreneurship is a male-dominated domain has been conducted in developed economies and has assumed the associated mechanisms apply equally in developing economies despite the different institutional contexts. Focusing on developing economies, such as China, presents opportunities to conduct research in contexts characterized by rising economic power but also strong informal institutions and gender inequality beliefs (Hughes et al., 2012). As a result, we observe multiple institutional forces (e.g., political norms and cultural beliefs) that simultaneously influence women entrepreneurs and shape their ventures' success. Extending women's entrepreneurship research to developing countries will enrich the existing literature and remind us of the diverse ways in which women's entrepreneurship is locally embedded, culturally contingent, and variably experienced across nations (Hughes et al., 2012).

## Implications for Practice and Policy

Our study has important implications for practitioners and policymakers in addressing gender inequality in the field of entrepreneurship. Our findings suggest that to close the gender gap in venture performance, simply providing female entrepreneurs with equal access to resources may not be sufficient. Mechanisms must be established to create a more enabling environment for women entrepreneurs to reach their potential in managing, leveraging, and benefiting from resource stocks (Williams et al., 2021). To do so, we must not only train individual female entrepreneurs but also advocate for system-level institutional changes to reduce the biases and barriers they face (Zhao & Wry, 2016). For example, government interference in market-based competition may be reduced, legal and institutional environments developed, and gender inequality beliefs overcome. Indeed, our findings show that in certain institutional contexts where government interference and gender inequality beliefs are sufficiently low, gender stereotypes may be less influential and the gender gap in venture performance can be reduced or even reversed.

At a more microlevel, our findings suggest that gender stereotypes and the associated work–family conflicts represent a root cause of the gender gap in venture performance. To address this issue, we need certain intervening mechanisms to relieve women entrepreneurs of excessive family obligations and reduce the associated mental and emotional strain (Edwards & Rothbard, 2000; Greenhaus & Beutell, 1985). To this end, practitioners and policymakers could learn from research on how women can benefit rather than suffer from spanning multiple spheres such as work and family (Powell & Eddleston, 2013; Rothbard, 2001).

## Limitations and Suggestions for Future Research

Our study has several limitations that create opportunities for future research. First, our data are predominately cross-sectional despite the fact that they cover multiple waves and are the most comprehensive data available to date on a national sample of Chinese entrepreneurs. As a result, we were unable to fully address potential endogeneity concerns such as reverse causality (e.g., the level of after-work social activities may be a result rather than a cause of venture performance). Therefore, the conclusions we draw are associational in nature and do not constitute strong causal inference. In addition, certain variables, such as cultural beliefs about gender

inequality, are stable and did not significantly change in the relatively short time period covered by our study. Future data collection efforts that aim to track the same entrepreneurial firms over a longer period (Marquis & Qiao, 2020) and capture the evolving trend in societal gender inequality beliefs would be valuable in addressing these challenges.

Second, while our conceptualizations of the contextual contingencies and mechanisms have solid theoretical grounding, the relevance and potency of these variables may change across different national settings (Bruton et al., 2009; Estrin et al., 2013; Fredstrom, Peltonen, & Wincent, 2020). We encourage scholars and practitioners to immerse themselves in a local context to gain a deep understanding of the institutional arrangements and cultural beliefs that influence the opportunities and constraints of female entrepreneurs therein (Kelley et al., 2013). This approach will also help uncover the mechanisms through which contextual factors shape gender inequality across multiple entrepreneurial outcomes. Such efforts will contribute further insights into the growing literature at the intersection of institutional theory and entrepreneurship (Tolbert et al., 2011; Zhao & Lounsbury, 2016; Zhao & Wry, 2016).

Finally, we focus on political-cultural institutional effects on specific entrepreneurial decisions (industry choice and after-work social activities) across provinces. Future studies could employ more direct and specific measures of gendered contexts and stereotypes for specific types of entrepreneurial activities. Although the number of hours spent on after-work social activities matters, the type of after-work social activities and the people involved in these activities are also important. For example, we expect that the after-work social activities in informal social settings (e.g., those that involve significant drinking) differ from those in other social venues (e.g., formal business dinners) in terms of the gender stereotypes they evoke and reinforce. Similarly, future studies could develop more nuanced approaches to explore the industry selection mechanism by going beyond the classification of high-revenue versus low-revenue industries. Researchers could further distinguish female entrepreneurs' different coping strategies—for example, sorting into low-revenue industries to avoid gender role incongruity (aiming low) versus challenging gender stereotypes and entering into male-dominant high-growth industries (aiming high)—and the different social incentives for and constraints on these choices across provinces. We expect these coping strategies to be seen as socially appropriate to varying extents depending on local institutional contexts.

## Conclusion

This study investigated the gender gap in Chinese entrepreneurial firms' performance. Our findings suggest that although significant gender differences exist, this gender gap is not uniform across provinces. Instead, informal political-cultural institutions differentially enable or constrain the entrepreneurial pursuits of male versus female entrepreneurs. We found that stronger gender inequality beliefs constrain venture performance, especially for firms owned by female entrepreneurs. The performance of female-owned ventures is facilitated and enhanced in provinces with relatively lower levels of government interference in market-based competition. Our results also corroborate two microlevel mechanisms—namely, industry selection and after-work social activities—that underpin these broadly observed institutional effects. We expect our study to stimulate further development of the institutional foundation of GRCT and inform more research and practice addressing gender inequality in entrepreneurship.

## Appendix I

### A. Coding of the Government Interference in Market-Based Competition Variable

The NERI market-development indices have been widely used for capturing the varied marketization processes across different Chinese provinces (Fan et al., 2009) based on statistics from national bureaus and aggregated managerial responses from survey data. In particular, it includes an index of the “reduction of government interference in market-based competition,” which captures the degree of reduced government interference in business in each province based on managers’ evaluations of the time and energy they invest in political relationship building. To ensure the index scores are comparable across provinces and years, the authors of the indices set 2001 as the base year and set the maximum value of government interference in 2001 at a score of 10 and the minimum value at a score of 0. Based on this setup, the authors then generated the corresponding score for each province in the base year 2001, which also range from 0 to 10. As such, this approach allows two provinces to have an equal score. While the scores in the base year range from 0 to 10, in other years, the scores are allowed to be greater than 10 or below 0. In our case, we reverse coded the original scores to create the variable “government interference in market-based competition.”

### B. Questions and Coding for the Survey Items Used to Generate the Gender Inequality Belief Variable

Item 1: How do you perceive the gender gap in terms of government leadership positions?

1. Compared with men, there are fewer women holding political leadership positions (coded 1).
2. Compared with men, there are comparable women holding political leadership positions (coded 0).
3. Compared with men, there are more women holding political leadership positions (coded -1).

Item 2: How do you perceive the gender gap in terms of division of labor in housework?

1. The husband does more housework than the wife (coded -1).
2. The wife does more housework than the husband (coded 1).
3. The husband and wife do a comparable level of housework (coded 0).

Item 3: Do you perceive that women are treated equally as men in our society?

1. No (coded 1).
2. Yes (coded 0).

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## Notes

1. The Political Bureau and its standing committee exercise the functions and powers of the Communist Party of China's Central Committee when its plenum is not in session. Members of the standing committee typically include the general secretary and president (the same person), premier, chairman of the standing committee of the NPC, president of the CPPCC, secretary of the Secretariat of the Central Committee, secretary of the Central Commission for Discipline Inspection, and first vice premier.
2. In the Mao era, the government encouraged women's employment by depicting women as socialist heroines. This was reflected in the famous slogan "women hold up half the sky."
3. We excluded 2,552 firms that were originally founded as state-owned or collective-owned enterprises but later transformed into POEs during market transition because these firms (*gaizhi qiye*) are distinct from other ventures in terms of their resource endowments and institutional legacies.
4. We conducted *t*-tests to compare key characteristics of the included and excluded firms. The two samples have no significant differences in terms of owner gender and firm age. However, smaller firms are more likely to have missing values on revenue and after-work social activities. As a result, smaller firms with no information on revenue and after-work social activities were dropped in corresponding models. Our findings should be interpreted with this in mind.
5. We chose self-reported social status instead of self-reported political or economic status or a summated score of all self-reported statuses for two primary reasons. First, we already included measures for political connections (e.g., owner NPC/ CPPCC membership and former government experience) and economic performance (e.g., firm and owner financial measures). Second, the national survey has many missing cases. If we employed a summated scale by adding up three variables, we would lose many more cases. As a result, we used only self-evaluated social status as an indicator of an owner's self-efficacy and self-esteem, which may affect venture performance in a gendered setting.

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