**The Impact of Gender and Political Embeddedness on Firm Performance: Evidence from China**

**Abstract**

This study explores the effects over time of gender and political embeddedness on the performance of private enterprises in China. Political embeddedness is related both to the owner personally and to the firm, and although the firm-level factor is meaningful, it is under-researched. We employ secondary data for two large sets of responses to identical questions from the Chinese Private Enterprises Survey (CPES) for the years 2002 and 2014. The results demonstrate that in 2002 enterprises owned by women had less operating income than those owned by men, but that by 2014 this difference had decreased. We found that the gender effect on enterprise performance was mediated mainly by political embeddedness, at the personal level and even more so at the firm level, in addition to the well-known effect of limited bank loans. The contribution of this study is its demonstration of the importance of forms of political embeddedness to the impact of gender on firm performance in the context of China.

**Keywords:** Political embeddedness; Gender; Business owners; Enterprise performance; Chinese private enterprises.

# Introduction

Liberal feminist theory suggests that all beings are equal and that therefore women and men are equally capable as self-seeking agents. Therefore, discrepant achievements between women and men are assumed to be the result of explicit legal/institutional barriers to women’s participation in economic and political life, rather than to inherent differences (Greer & Greene, 2003). As women are deprived of opportunities that are available to men, they are less likely to perform to the level of their potential and thus likely to underperform relative to men (Fischer, Reuber, & Dyke, 1993). Once barriers and discrimination against women are removed, men and women have equal access to opportunities and therefore engage in similar behaviours and perform as well as men (Johnsen & McMahon, 2005). Drawing on the liberal feminist approach, empirical studies on gender and entrepreneurship show that female entrepreneurs have less access to forms of capital, and particularly important is the challenge they face in recruiting financial capital (Bosse & Taylor, 2012; Jennings & Brush, 2013). However, scarce access to political connections has not been considered as a major discriminator in regard to gender underperformance in business.

Especially in transition economies, political embeddedness is an essential requirement for success, since it constitutes an additional important resource for entrepreneurs (Cheng, Cheng, & Zhuang, 2019; Haveman, Jia, Shi, & Wang, 2017; Sun, Mellahi, & Thun, 2010). The effects of political embeddedness on firm performance have been well studied in China (e.g., Fuller, 2010; McNally & Wright, 2010; Zhang, Xu, Chen, & Jing, 2020). Rauf, Voinea, Bin Azam Hashmi, and Fratostiteanu (2020) argued that China is the best case for studying the role of political embeddedness, since in spite of the signiﬁcant transformation towards a market-based economy over the last few decades, the Chinese economy is still under strong government influence. As well as being the world’s largest social system and its second largest economy, China is an economy in transition (Boisot & Child, 1999). The country has gone through major changes in terms of its economy, society, politics and culture (Evans & Straus, 2010), and the rise of private enterprises has been central to the success of its economy (He, 2009).

As private enterprises are embedded in the complex institutional framework of the transition economy, Yang and Modell (2012) called for further research into institutional embeddedness and other forms of this phenomenon. In terms of gender, Lam, McGuinness, and Vieito (2013) called for researchers to investigate the role of businesswomen “through the prism of China’s emerging market economy, and its unique institutional structure … No other market in recent times has experienced such momentous structural change. It is therefore timely to investigate the effect of such ownership change on Chinese women’s access to leadership positions in the business sphere.”

Cheng et al. (2019) noted the challenge of measuring the political connections of private enterprises in China, a challenge to which the present study responds. We explore the effect of political embeddedness on enterprise performance in China at the personal level and at the as yet unexplored firm level. In addition to the common measures that relate to political embeddedness at the personal level (Cheng et al., 2019), at the firm level we use the unique construct of political embeddedness as found in the Chinese context (Book writing group, 2018). The advantage of political embeddedness is that politically embedded firms have political legitimacy per se and may enjoy more public resources (Li, Miao, Zheng, & Tang, 2019). The disadvantage in the Chinese situation is that uncertainties arise when governmental officials are involved in firms’ decisions, and unexpected changes to existing economic policies are possible (An, Chen, Luo, & Zhang, 2016). This disadvantage seems to be of particular significance to businesswomen.

This study is motivated by the recent rise in female private business ownership in transition economies in general and in China in particular. Previous research has explored gender differences in firm performance in different countries, with conflicting results (e.g., Fairlie & Robb, 2009; Scott et al., 2014). In China, overall gender equality has improved slightly over recent decades, but the speed of improvement appears slower than the world average (Chen & He, 2020). The aim of this study is to reconcile the conflicting findings in previous studies regarding the effect of gender on business performance in China, thereby addressing the gap in the literature regarding the relationship between gender and political embeddedness and their effect on firm performance.

We employed secondary data in the form of two sets of responses from owners of private enterprises to the Chinese Private Enterprises Survey (CPES) in the years 2002 and 2014, when the relevant questions were identical. We tested the effect of gender on firm performance over time along with the mediation effects of political embeddedness and financing. We found that over the 12 years from 2002 to 2014, the gender gap in private enterprise performance in China narrowed. In addition to the factors already identified, namely, personal political embeddedness (Cheng et al., 2019; Zhang & Guo, 2019) and business financing (Xu, Zhan, James, Fannin, & Yin, 2018), we also discovered the importance of political embeddedness at the firm level as a factor in business performance and as an explanatory factor in the lagging performance of women’s enterprises.

Our study fills a gap in the literature related to the effect over time of gender on firm performance in China from the perspective of social networking. We relate gender performance in China to liberal feminist theory and apply the discourse of women’s risk aversion to political involvement. In the context of the Chinese authoritarian transition economy, we expand the construct of political embeddedness to the firm level. We find that although the resource of political embeddedness is beneficial for private enterprises (e.g., Michelson, [2007](https://link.springer.com/article/10.1007/s10551-017-3637-9" \l "ref-CR44" \o "Michelson, E. (2007). Lawyers, political embeddedness, and institutional continuity in China’s transition from socialism. American Journal of Sociology,                            113(2), 352–414.); Puffer, McCarthy, & Peng, 2013; Talmud & Mesch, [1997](https://link.springer.com/article/10.1007/s10551-017-3637-9" \l "ref-CR67" \o "Talmud, I., & Mesch, G. S. (1997). Market embeddedness and corporate instability: The ecology of inter-industrial networks. Social Science Research,                            26(4), 419–441.)), it entails a degree of uncertainty that women are unlikely to embrace. Our findings also show that political embeddedness at both the personal and firm level mediates the effect of gender on firm performance, with practical implications for women business owners and policy makers.

# Theoretical Framework and Hypotheses

## 2.1 Female Entrepreneurship in Transition Economies

Transition economies are different from both controlled and developed economies because of the scope of their reforms and the uncertainty regarding the final outcomes of those reforms (Shinkle, Kriauciunas, & Hundley, 2013). In traditional transition economies, the state and its planning apparatus fade out in their role as the principal coordinating mechanism and are replaced by market-based coordinating mechanisms (Kornai, 2008). Reforms in transition economies broadly encompass trade liberalization, the end of guaranteed employment, privatization in a variety of fields, and often also the loss of traditional markets (Makhija, 2003; Svejnar, 2002). The focal impact of economic transition on firms is the need to survive in uncertain competitive contexts (Peng, 2003; Peng & Heath, 1996) and to come up with strategies for dealing with these challenges.

Transition economies are often also fast-growing emerging markets (Amato & Gerlach, 2002; Rottig, 2016), and as such they create an environment conducive to entrepreneurship in which entrepreneurs supply consumer goods, mobilize savings, and compete with state-created monopolies (McMillan & Woodruff, 2002), and creation of private enterprises flourishes (Park, Li, & Tse, 2006; Smallbone & Welter, 2001). Nevertheless, transition economies also constitute a highly uncertain context for private enterprises (Peng, 2003).

In transition economies undergoing substantial economic, political, and social changes, the ability of private small and medium enterprises (SMEs) to promote innovation, experimentation, and adaptation in the business environment is of major importance (Aidis, Welter, Smallbone, & Isakova, 2007; Ramadani, Dana, Gerguri, & Tašaminova, 2013; Ramadani, Hisrich, & Gërguri-Rashiti, 2015). Hence, if the establishment of private enterprises contributes to economic and social development, then the involvement of women in entrepreneurship is essential. Welter, Smallbone, Isakova, Aculai, & Schakirova (2004) and Ramadani et al. (2015) identified several reasons why female-owned enterprises are of particular importance in the context of transition economies: (1) job creation by female entrepreneurs for themselves and other women, reducing the impact of labour market discrimination; (2) female entrepreneurs functioning as role models in the context of employment opportunities; (3) an increase in women’s autonomy and role in society and the economy; (4) establishment of employment opportunities fighting trafficking, which is a major concern in many transition economies; and (5) improvements to the overall transition process and development of the private sector. Institutional barriers that potentially influence female business creation in transition economies include discrimination against women in the labour market, traditional attitudes, religious beliefs, a view of entrepreneurship as essentially male, and family values (Aidis et al., 2007, compiled and adapted from Welter, David, Elena, Nina, & Natalja, 2003).

Empirical and theoretical studies maintain that entrepreneurship is inherently gendered (for an overview see Brush et al., 2012; Foss, Ahl, & Mikalsen, 2019; Roos, 2019), and research has explored gender differences in women’s firm performance in general (Coleman, 2016; Fairlie & Robb 2009; Perryman, Fernando, & Tripathy, 2016; Scott et al., 2014), in transition economies (Ramadani et al., 2015; Sabarwal & Terrell, 2008; Welter, Smallbone, & Isakova, 2006) and particularly in China (Hussain, Scott, Harrison, & Millman, 2010; Lam et al., 2013; Liu, Wei, & Xie, 2014; Sabarwal & Terrell, 2008).

The mainstream literature discusses the gender gap mainly in terms of the so-called gender underperformance hypothesis (Du Rietz & Henrekson, 2000; Gatewood, Carter, Brush, Greene, & Hart, 2003) according to which female entrepreneurs tend to underperform compared to men (Fairlie & Robb, 2009; Rosa, Sara, & Daphne, 1996). This relationship between gender and performance has been explored extensively (Lee & Marvel, 2014; Mitchelmore & Rowley, 2013), and recent empirical results indicate a decrease in the gender gap over time (Gawel, 2013; Guzman et al., 2019; Koellinger, Minniti, & Schade, 2013). Nevertheless, empirical studies have yielded inconsistent findings as to the relationship between gender and firm performance in China (Alon, Deng, & Wang, 2011; Chow, 2006; Lam et al., 2013), and thus it is important to investigate this issue further.

The liberal feminist approach assumes a lack of rights and opportunities for women entrepreneurs in society, organizations, and support systems. Additionally, barriers and lack of access to resources such as financial capital, human capital, and adequate training affects women negatively and leads to a gender gap in entrepreneurship (Bosse & Taylor, 2012; Jennings & Brush, 2013; Pettersson, Ahl, Berglund, & Tillmar, 2017). Moreover, the basic assumption of gender equality suggests that differences in outcomes between female and male actors are necessarily due to institutional barriers (Greer & Greene, 2003). Therefore, the relative underperformance of women is attributed to a lack of opportunities and should decrease once institutional barriers are removed (Fischer et al., 1993; Johnsen & McMahon, 2005).

In transition economies, liberalization tendencies and trends lead to an overall decrease in barriers for business owners, and it is to be expected that this decrease will also have an effect on women business owners. Indeed, as observed by Alon et al. (2011) and Shi (2005), the new Chinese economy has created a favourable environment for women entrepreneurs, who are increasingly involved in areas such as medicine, social services, consulting, insurance, real estate, and education. Accordingly, our first hypothesis concerns the relationship between gender and performance for private businesses in transition economies such as China over time:

H1.1 Enterprises owned by women have lower performance than enterprises owned by men.

H1.2 The gender gap in enterprise performance has decreased over the period under study.

## 2.2 Political Embeddedness in Transition Economies

Uncertainty in in the economic environment of transition economies is inherent and caused by two parallel mechanisms: institutional transformation (in which new institutional, social, and political structures evolve patterns of behaviour influenced by the socialist/communist past) and the fundamental uncertainty that is characteristic of the so-called free market (Sušjan & Redek, 2008). Therefore, in transitional economic environments, an overflow of elements and events contributes to fundamental fluidity, not only in market processes but also in the institutional framework as a whole (Sušjan & Redek, 2008).

In transition economies, uncertainty can be reduced by creating relationships with state bureaucrats (Burt, 1982; Pfeffer & Salancik, 1978), as persistently authoritarian regimes generate weak rule of law and give state bureaucrats considerable power over the economy. There is empirical evidence that countries with a weak institutional environment (Tsamenyi & Uddin, 2008) generate an indispensable need for a strong connection between political leaders and ﬁrms (Berglöf & Claessens, 2006; Dieleman et al., 2012), not least because networks can compensate for deficiencies in a turbulent institutional environment. Ties between organizations and political actors have been found to have similar, even greater benefits in emerging markets (Puffer et al., 2013), as political ties help to fill the institutional void that arises from the lack of market intermediaries (Luo & Chung, 2005; Okhmatovskiy, 2010; Peng & Luo, 2000).

Thus, in markets that develop under authoritarian regimes, relationships between firms and state authorities help firms learn how state bureaus work, which reduces uncertainty and engenders trust, “stabilizing operations and making it easier to persuade bureaucrats to allow access to resources and customers, reduce regulatory burdens, lower fees and taxes, and provide better regulatory oversight” (Haveman et al., 2017: 68). Moreover, there is empirical evidence that in authoritarian regimes, business–state ties improve firm performance (Haveman et al., 2017). For example, Puffer et al. (2013) found that ties between firms and political actors generate greater benefits in emerging markets because political ties help fill the institutional void that results from the lack of market intermediaries (Luo & Chung, 2005; Okhmatovskiy, 2010; Peng & Luo, 2000).

Political embeddedness has been studied in terms of the benefits for economic actors on the basis of connections to the state (Michelson, 2007; Talmud & Mesch, 1997).Michelson (2007: 352) defined political embeddedness as “bureaucratic, instrumental, or affective ties to the state and its actors.” This is especially pertinent in emerging markets due to weak monitoring and the frequent intervention of political actors. Academic studies show that ﬁrms in emerging and developed economies seek strategies to enhance their embeddedness within political institutions (Peng & Luo, 2000; Rauf et al., 2020; Zheng et al., 2015). Relationships between state and firms are instrumental and affective at the same time, since trust is developed and favours are exchanged (Michelson, 2007).

However, not all political ties are equally effective in improving the productivity of firms. The inherent beneﬁts of political embeddedness include influence over regulation (Bonardi, Holburn, & Vanden Bergh, 2006), enhanced legitimacy (Hillman et al., 1999), privileged access to state-controlled resources (Bertrand et al., 2004; Goldman et al., 2009), privileged access to information (Lester, Hillman, Zardkoohi, & Cannella, 2008), government subsidies (Bonardi, Hillman, & Keim, 2005; Faccio, Masulis, & McConnell, 2006), threat buﬀering (Zengh et al., 2019), low-cost banking (Khwaja & Mian, 2005) and access to foreign markets (Agrawal & Knoeber, 2001). Empirical studies have shown that political embeddedness has a positive impact on ﬁnancial performance (Li et al., 2019; Mu & Jiang, 2018), strategic performance (Luo & Dong, 2013; Wang, Lai, Song, & Lu, 2018) and environmental performance (Scott, Balaev, & Clarke, 2018). Possible negative outcomes of political embeddedness concern operational inefficiencies (Hadani & Schuler, 2013; Li et al., 2019; Okhmatovskiy, 2010), pressure to bestow favours on politicians (Bertrand et al., 2004), misappropriation of value and personal gains (Sun, Xu, & Zhou, 2016), government monitoring (Marquis & Qian, 2014) and exposure of firms to risks of government expropriation (Greve, Man Zhang, & Zhang, 2017; Jia & Mayer, 2017). In contrast to studies that focused predominantly on the benefits of political embeddedness, such as preferential treatment by the government, Zhang et al. (2020) provided evidence that in emerging markets with immature formal institutions and a powerful government, such as China, political embeddedness is associated with significant costs due to increased vulnerability to a loss of legitimacy, both with the public and with the government.

In short, the main negative outcomes of political embeddedness on private enterprises in transition economies concern dependencies, with the government acting as a major source of uncertainty and constraint for firms because it controls critical resources (e.g., land and business permits) and can implement policies that impact firms’ survival and performance (Hillman, Withers, & Collins, 2009). Therefore, for private business owners in transition economies, contact with government agencies incurs a risk of dependencies. According to the liberal feminist approach, women in business are discriminated against on the basis of gender (Fischer et al., 1993). Systematic biases restrict women’s access to resources (such as education and business experience) and affects their ability to start and manage businesses (Brindley, 2005; Brush, Bruin, & Welter, 2009; Butler, 2003; DeTienne & Chandler, 2007; Fischer et al., 1993; Greer et al., 2003; Morris, Miyasaki, Watters, & Coombes, 2006). As established above, political embeddedness is an important resource for private businesses, especially in transition economies such as China. The impact of gender on political embeddedness in such economies has received little research attention and is therefore the subject of our second hypothesis.

In China’s transition economy, women’s entrepreneurship has entered a period of rapid development. From 1979, Mao’s political ideology and economic reforms promoted gender equality and female participation in the workplace (Choi & Chen, 2006). In recent years, more Chinese women than men have started Internet businesses. *Gender Equality and Women’s Development in China* (The State Council Information Office of the People’s Republic of China, 2015)reports that 55% of Internet entrepreneurs in 2015 were women. According to the *GEM 2017/2018* report (Monitor, 2018), the ratio of the Chinese female/male Early Entrepreneurial Activity (TEA) index is 0.87, which ranks tenth among 54 countries; the ratio of Chinese female/male early opportunity-driven entrepreneurial activity index is 1.09, ranking second.

In general, even though an increasing number of Chinese women are entering the business world and becoming business owners, there are still fewer female than male entrepreneurs. Xu et al. (2018) pointed out that “Social feminists argue that Chinese women have long been socialized to be inferior, submissive and obedient at home. Their lack of confidence in the business world is just a manifestation of Chinese culture.” Despite indications that China’s overall gender inequality has improved slightly, its speed of improvement is slower than the world average (Chen & He, 2020).

McNally and Wright (2010) maintained that the political embeddedness of China’s private entrepreneurs with government agents and institutions is characterized by a distinctive “thickness.” “Private capital holders are not only shaped by the structuring force of the party-state’s power; they are actively engaged in ongoing relations with the party-state and its actors – relations that are characterized by combinations of institutional, instrumental and affective ties that are inescapably linked with each other” (McNally & Wright, 2010: 191). Furthermore, in the Chinese economy, “thick embeddedness” is a necessary precondition to success, as it enables entrepreneurs to obtain information, access credit, procure licenses, avoid taxes, and acquire land ([Dickson, 2003](https://www.sciencedirect.com/science/article/pii/S0967067X10000267?casa_token=AX13CyPxwDIAAAAA:FusHTWcrYLkt83RKuCnQrI2HgCTu8g3-raYjom0Hv5Vggp_3EKBtD0nc8-wsOWqdEO6IoVVg" \l "bib10); [Shih, 2004](https://www.sciencedirect.com/science/article/pii/S0967067X10000267?casa_token=AX13CyPxwDIAAAAA:FusHTWcrYLkt83RKuCnQrI2HgCTu8g3-raYjom0Hv5Vggp_3EKBtD0nc8-wsOWqdEO6IoVVg" \l "bib37)). Thus, gaining information about areas important for business performance decreases uncertainty and facilitates greater stability for private business owners. Whereas political embeddedness in China is largely instrumental, with private business owners entangled within the political system via a variety of ties and relationships (Alpermann & Björn, 2006; Dickson, 2003; Zhang, 2007), political embeddedness invites political actors into the decision-making domain of the business (Hillman et al., 2009), thereby increasing uncertainty.

Following a substantial body of empirical studies (mainly conducted in Western countries), there is considerable empirical evidence that women are more risk averse than men (Barber & Odean, 2001; Powel & Ansic, 1997; Robb & Watson, 2012; Sexton & Bowman-Upton, 1990), and risk aversion has been put forward as an explanation for the lower performance of SMEs controlled by women (Watson & Robinson, 2003). However, studies conducted in traditional non-urban societies have yielded mixed results (Pondorfer et al., 2016). More specifically, in rural China, Gong and Yang (2012) found a relationship between women’s and men’s level of risk aversion and the cultural characteristics of their respective immediate environment in terms of patriarchalism and matriarchism. In light of the nature–nurture debate (see Gneezy et al., 2009), it is safe to state that gender differences in risk-taking are also culture-specific and therefore due to patterns of socialization (Pondorfer et al., 2016). In China, Confucian ideology stresses the role of women as caregivers and housewives (Jia & Ma, 2015), and the literature on women in the Chinese labour market indicates that women experience gender-based discrimination and have lower incomes than men (Jia & Ma, 2015; Ochiai & Aoyama, 2014; Tian & Liu, 2018). Although under communism the Chinese state attempted to limit gender inequality (Robinson, 1985), there was less affirmative action during the transition, especially in the private sector (Tian & Liu, 2018). Accordingly, in the private sector, men are more politically engaged than women, and often participate actively in local policies (McNally & Wright, 2010).

Most studies have measured the political embeddedness of businesses in terms of the political connections of individuals, such as entrepreneurs, chief executive officers (CEOs), and other top executives (Faccio, 2006; Haveman et al., 2017). The political embeddedness of individuals demonstrates a “duality” of firms and individuals (Shipilov et al., 2014). Thus, when entrepreneurs are politically embedded at the personal level, their political connections affect not only their personal behaviour but also the conduct of the businesses they own. However, for an enterprise, a relationship based on the identity of the individual employee is different from a relationship based on the identity of the organization (Shipilov et al., 2014; Sun, Xu, & Zhou, 2011). Therefore, the political embeddedness of a firm cannot be measured simply on the basis of the personal political embeddedness of its entrepreneurs.

To deal with this difficulty, we measure political embeddedness on two dimensions: personal embeddedness and firm embeddedness. This is in line with former studies (Zhang & Guo, 2019) that distinguish between political ties formed through government affiliation (organizational embeddedness) and those resulting from personal political services (personal embeddedness). A similar distinction has been suggested by McNally and Wright (2010) in terms of institutional versus affective ties. In our study, the two levels of political embeddedness concern the political embeddedness of the business owner in terms of active involvement in political agencies, and the political embeddedness of the firm in terms of the direct involvement of the Chinese political party. This external involvement entails an uncertainty that women, more than men, tend to avoid (Powel & Ansic, 1997; Watson & Robinson, 2003).

Based on the above considerations, we expect that men who own private businesses will outperform and be more politically embedded than women who own private businesses. Therefore, we can assume that if male business owners outperform female business owners, and if women are less politically embedded at the firm level than men, then the level of firm political embeddedness explains the lower performance of businesses owned by women. This relationship may be formulated through mediation, as in the known effect of bank loans on the relationship between gender and firm performance (e.g., Xu et al., 2018) and the joint effect of market development and political embeddedness on firm performance (Haveman et al., 2017). Therefore, we hypothesize a mediation effect:

H2.1 Personal political embeddedness mediates the relationship between gender and firm performance.

H2.2. Firm political embeddedness mediates the relationship between gender and firm performance.

# Method

## 3.1 Sample and Data

We used data from a CPES survey of private enterprises in China for 2002 and 2014, two years for which the relevant survey questions were identical. The data are representative of the population of private companies in China and have been used in previous studies (e.g., Liang & Gong, 2016; Zhang & Guo, 2019). Comparison of the 2002 and 2014 results allows us to examine the temporal changes experienced by Chinese private enterprises in the twenty-first century. For better estimation, we also selected pooled multi-phase cross-sectional data.

## 3.2 Dependent Variable

*Firm performance.* We measured a firm’s performance by its operations income, taking the natural logarithm of the amount reported at the end of the previous year.

## 3.3 Independent Variable

*Entrepreneur’s gender*. The gender of the entrepreneur is a dummy variable coded 1 if the entrepreneur is a man, and 0 otherwise.

## 3.4 Explanatory Variables

*Personal political embeddedness*. We measured political embeddedness at the personal level by membership of private entrepreneurs in the People’s Congress (PC) or the Chinese People’s Political Consultative Conference (CPPCC). We assigned a value of 0 for no membership, 1 for membership of either organization, and 2 for membership in both organizations at the same time.

*Firm political embeddedness*. We used a binary dummy variable to measure political embeddedness at the level of the firm in terms of whether the firm had established its own organizational branch of the Communist Party of China (CPC) (i.e., more than three employees were formal party members), assigning 1 for yes and 0 for no. To the best of our knowledge, this variable has not previously been applied as a measure of political embeddedness. Organizational branches play a meaningful role in establishing essential connections with the ruling party. Regulations on the work of the branches of the CPC state that “For party branches in non-public economic organizations, emphasis is placed on uniting the masses of employees to promote the healthy development of enterprises” (Book writing group, 2018: Article 4).

*Bank loan*. We measured the bank loan variable by taking the natural logarithm of the gross amount of loan to be repaid at the end of the previous year.

*Family support*. We included a dummy variable for family support to indicate whether there was financial investment from the entrepreneur’s family members or relatives when the firm was established.

## 3.5 Control Variables

We controlled for a series of variables relating to characteristics of the entrepreneur, the firm, the industry, and the region.

As measures of the personal characteristics of entrepreneurs, we included age, education, and membership in the CPC. The age variable takes the natural logarithm of the entrepreneur’s age. Entrepreneur’s education is an ordinal variable for which a greater number of years indicates a higher level of education. CPC is a dummy variable for which the value 1 indicates CPC membership and 0 no membership.

We measured firm age as the logarithm of the difference between the year of the survey and the founding year of the business.

In terms of industrial characteristics, we controlled for the gender proportion in the industry. We calculated the employee gender percentage for each industry and divided industries into two groups, assigning the value 1 to those in which the number of women entrepreneurs was above the average, and 0 for those below the average.

The market index provides the most reliable information on regional institutional development in China and is widely used by academics (Shen, Au, & Li, 2019). To avoid reverse causality, we used the reported market index for the year prior to the income reported. The market index (Wang, Gang, & Li, 2019) is the level of economic development and market activities (for product as well as factor markets) in the 31 provinces as measured by the Chinese national government.

## 3.6 Analytical Methodology

We adopted different analytical methods to test our two main hypotheses of a gender gap in enterprise performance and mediation by political embeddedness. For the hypothesis related to the gender gap, we used Tobit models. For the hypothesis related to mediation by political embeddedness, we applied a bootstrapping approach (Preacher & Hayes, 2004), which has been used widely (Cheung & Lau, 2008; Fritz, Taylor, & MacKinnon, 2012; Pituch & Stapleton, 2008; Zhao, Lynch, & Chen, 2010). We measured the dependent variable of firm performance in terms of the firms’ operation income accumulating around 0. When dealing with such a limited dependent variable, Tobit models are useful for obtaining a more accurate estimation by censoring observations with a negative outcome (Tobin, 1958).

In order to analyse firm performance gaps by entrepreneur gender, we used the Blinder–Oaxaca decomposition for the Tobit regression models, in line with previous research (Fairlie & Robb, 2009). The decomposition method (Blinder, 1973; Oaxaca, 1973) examines outcome gaps by groups. It explains the difference in the means of a dependent variable by decomposing the gap into the part that is due to differences in the mean values of the independent variable within the groups, and the group differences in the effects of the independent variable. This statistical method allows the effect of gender on firm performance to be analysed in terms of *explained* parts, in which characteristics lead to the differences, and an *unexplained* part, which can be ascribed to discrimination.

Taking into account research findings that bank loans (e.g., Xu et al., 2018) and family support (Inmyxai & Takahashi, 2012) play a mediating role in the relationship between entrepreneur gender and firm performance, we used the parallel mediation approach (Hayes, 2013) to explore the mechanism of the mediating effect of political embeddedness on gender and firm performance in the case of multiple mediating variables.

To address the concern that entrepreneur’s gender and firm performance may be jointly determined by omitted variables, we applied the regression specification error test (RESET) (Ramsey, 1969), a popular diagnostic tool for explaining omitted variables bias. Although the RESET result for the Tobit regression model for 2014 shows strong endogeneity (*p* = 1.258e−10 < 0.05), the quadric form of firm age has power in explaining the endogenous variable (*p* = 0.05344 > 0.05). Hence, to alleviate endogeneity, we took the square of firm age. However, adding the square of firm age to the Tobit regression model will cause multicollinearity (the VIF of firm age and firm age square is [20, 30]). Fortunately, the significance and symbol of the independent variable and mediation variables in the Tobit regression model with the square of firm age are qualitatively similar if not included. Therefore, in this case we can ignore the multicollinearity (Alfred DeMaris, 2005).

# Results

## 4.1 Descriptive Statistics

### Statistical characteristics of the data

We present descriptive statistics for all our variables by year and by gender in Tables 1, 2-1, 2-2 and 2-3.

Table 1 gives the descriptive statistics by year. Comparing 2002 and 2014, we see that the proportion of male and female entrepreneurs did not change meaningfully and that personal political embeddedness remained almost the same. However, firm political embeddedness changed considerably, since there is a difference of 0.14 in the means between 2002 and 2014. In terms of financial support, it was easier for firms to receive bank loans in 2014, as the mean of the bank loan variable increased by 0.74 from 2002. In 2002, families were more likely to support the firm financially.

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Tables 2-1, 2-2 and 2-3 give descriptive statistics by gender for 2002, 2014 and the 2002/2014 pooled data, showing that 2014 was similar to 2002. Firms owned by men had better outcomes and obtained bank loans more easily. Firms owned by women were less politically embedded, and female entrepreneurs were more likely to be financially supported by their families. There were no significant differences between male and female entrepreneurs in education, age, or firm age.

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### Correlation of the variables

Tables 3-1, 3-2 and 3-3 provide the correlations for the individual variables for 2002, 2014 and the 2002/2014 pooled data. According to Lind, Marchal, and Mason (2002), the threshold of collinearity is 0.3, and we therefore conclude that there is no multicollinearity among our explanatory variables.

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## 4.2 Relationship between Gender and Firm Performance

Table 4 presents the results of the Tobit regression models for 2002, 2014 and the 2002/2014 pooled data.

Looking first at the results for the pooled data, gender had a significantly positive effect on firm performance (β = 0.2323, *p* < 0.01). The performance of firms owned by women was lower than that of firms owned by men, and therefore hypothesis H1.1 is supported.

There was a change in the effects of gender on firm performance. Specifically, gender effects on firm performance in 2002 were significant (β = 0.4078, *p* < 0.01), whereas in 2014 they were no longer significant, and the coefficient for 2002 is bigger than that for 2014 (although all the correlation coefficients are positive). These findings suggest that the performance of female entrepreneurs improved over the period, and that the influence of gender on firm performance became weaker. Therefore, the gender gap in enterprise performance decreased, and hypothesis H1.2 is supported.

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INSERT TABLE 4 ABOUT HERE

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We performed a chi-square test to investigate whether there were statistically significant changes in the main variables between 2002 and 2014 (see Table 4-1). There were significant changes in firm political embeddedness, personal political embeddedness, and family support; only for bank loans did we find that there had been no change. Taken together with the coefficients in the Tobit regression models, these significant changes provide indirect evidence in support of hypothesis H 1.2.

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INSERT TABLE 4-1 ABOUT HERE

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To analyse firm performance gaps by entrepreneur gender, we used Blinder–Oaxaca decomposition for the same variable set with Tobit regression models for 2002, 2014 and the 2002/2014 pooled data (see Table 5).

The analysis of the pooled data shows that the overall difference between female and male entrepreneurs is significant at the 1% level (β = -0.649), indicating a gender gap in performance. Specifically, firms owned by women performed worse than those owned by men, and hypothesis H1.1 is further supported. Table 5 also shows that the coefficients for the explained and unexplained parts are significant at the 1% level. Taking the unexplained part as a measure for discrimination (Jann, 2008), this indicates that the gender performance gap was caused by group productivity (64.07%) and by discrimination (35.93%). Further analysis of the pooled data reveals a highly significant influence of bank loans, firm political embeddedness, and person political embeddedness on the gender performance gap.

The results of the Blinder–Oaxaca decomposition for the data for 2002 and 2014 provide additional support for hypothesis H1.2. For 2002, the unexplained part of the firm performance differential between male and female owners is significant, and the effect proportion relative to the total effect is 63.02%. In 2014, the unexplained part is no longer significant, and its effect ratio is reduced to 16.16%. These results suggest that the effect of gender discrimination on performance decreased over the period.

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## 4.3 Mediating Effect of Political Embeddedness

Tables 6-1 and 6-2 give the results of the analysis for the pooled data of the mediating effect of political embeddedness. We also carried out a bootstrapping test to investigate further the mediating effect of political embeddedness, as reported in Tables 6-3 and 6-4.

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INSERT TABLES 6-1, 6-2, 6-3, 6-4 ABOUT HERE

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Looking first at Table 6-1, the regression coefficient of gender on personal political embeddedness is significant (Step 1: β = 0.09229, *p* < 0.01), as is the regression coefficient of gender on firm performance (Step 2: β = 0.23234, *p* < 0. 01). Moreover, when we regress gender and personal political embeddedness on firm performance (Step 3), the coefficient of gender is reduced (β = 0.23230) but remains significant at the level of 0.01, and personal political embeddedness and firm performance are significantly correlated. Thus, personal political embeddedness mediates the relationship between gender and performance. The results of the bootstrapping test (Table 6-3) show that the partial mediating effect of personal political embeddedness is significant because the confidence interval for its mediating effect does not contain 0 ([0.0122, 0.04]). Therefore, personal political embeddedness partially mediates the relationship between gender and performance, and the proportion of the mediation effect to the total effect is 10.07%. These results provide support for hypothesis H2.1.

Turning to Table 6-2, the regression coefficient of gender of entrepreneur to firm political embeddedness is significant (Step 1: β = 0.10022, *p* < 0. 01), as is the regression coefficient of gender on firm performance (Step 2: β = 0.25076, *p* < 0. 01). Moreover, when gender and firm political embeddedness are regressed on firm performance (Step 3), the coefficient of gender is reduced (β = 0.23230) but remains significant at the 0.01 level. The same is found for firm political embeddedness and firm performance, which are significantly correlated. Thus, personal political embeddedness mediates the relationship between gender and performance. The results of the bootstrapping test (Table 6-4) show that the partial mediating effect of firm political embeddedness is significant. Therefore, there is a partial mediating effect of firm political embeddedness, and the proportion of the mediation effect to the total effect is 26.03%. Thus, all the evidence above supports the hypothesis H2.2.

We used multiple mediating variables to investigate the mediating effect of political embeddedness on gender and firm performance. Tables 7-1 and 7-2 describe the effects of parallel mediation verified by the bootstrapping approach for 2002 and 2014, respectively. Figure 1 presents a conceptual model for the parallel mediation effects on the relationship between gender and firm performance for 2002 and 2004.

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INSERT TABLES 7-1, 7-2, FIGURE 1 ABOUT HERE

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Looking first at the results for 2002 (Table 7-1), three parallel positive partial mediators are significant: political firm embeddedness (effect = 0.085), bank loan (effect = 0.131), and family support (effect = 0.012). Among the three parallel partial mediators, the mediating effect of firm political embeddedness is very prominent, with an effect proportion relative to the total parallel mediation effect of 37.28%. Thus, the mediation effect of firm political embeddedness is second only to that of bank loan. However, in this case, personal political embeddedness no longer plays the same role as firm political embeddedness. This suggests that the mediating effect of firm political embeddedness remains very important, even in the context of three parallel partial mediators that play a common mediating role in the relationship between gender and firm performance.

The conceptual model for 2002 (Figure 1) shows that male entrepreneurs have higher firm political embeddedness and receive more bank loans than their female counterparts (a1 = 0.090, a2 = 0.652). Higher firm political embeddedness and more support in the form of bank loans are subsequently related to better firm performance (b1 = 0.941, b2 = 0.201). Although family support positively mediates (a3 × b3 = 0.012 > 0) and female business owners receive family support (a3 = -0.065), more financial support from the family reduces firm profits (b3 = -0.190). These results suggest that female entrepreneurs are more likely than their male counterparts to access family support and less likely to have access to firm political embeddedness and bank loans, even though the three parallel partial mediators play the same positive mediating role. More importantly, firm political embeddedness is better for performance than bank loans (b1 > b2).

The results for 2014 (Table 7-2) show that three parallel positive partial mediators remain significant; in addition to firm political embeddedness (effect = 0.140) and bank loan (effect = 0.288), as in 2002, the other mediator is personal political embeddedness (effect = 0.071). Family support, which was significant in 2002, was insignificant in 2014. The mediating effect of political embeddedness was much higher in 2014 than in 2002 because in 2014 the combined proportion of firm political embeddedness and personal political embeddedness relative to the total parallel mediation effect was 42.28%. It should be noted that the strongest mediator in both years was the bank loan variable. The mediating effect of firm political embeddedness in 2014 (proportion relative to the total effect = 17.7%) is very prominent within the political embeddedness variables, much more than personal political embeddedness (proportion relative to the total effect = 8.96%).

In summary, for 2014 the conceptual model (Figure 1) shows that male business owners not only had the advantage of higher political embeddedness but also obtained more bank loans than female business owners. Comparison of the parallel mediations in 2002 and 2014 (see also Tables 7-1 and 7-2) shows that the impact of political embeddedness on the relationship between entrepreneur gender and business success increased from 2002 to 2014. Female entrepreneurs became more successful, because the proportion of direct effect decreased from 64.9% in 2002 (Table 7-1) to 36.9% in 2014 (Table 7-2). Over the twelve years, bank loans and political firm embeddedness mediated the relationship between gender and performance more effectively, with the scales of the two variables increasing from 20.2% to 36.3%, and from 13.1% to 17.7%, respectively. The combined mediation effect of the variables related to external financing and political embeddedness increased to such an extent that in 2014 the effect of the owner’s gender on firm performance was not significant when these variables were included in the regression (Table 4).

# Discussion and Conclusions

The empirical results based on CPES data for the years 2002 and 2014 support hypothesis H1.1 that enterprises owned by women had lower performance than enterprises owned by men. This gender gap in performance decreased over the twelve-year period, supporting hypothesis H1.2. This trend is in line with the findings of numerous studies that have investigated the performance of businesses owned by women in different counties (e.g., Coleman, 2016; Fairlie & Robb, 2009; Perryman et al., 2916) and in China (Hussain et al., 2010; Lam et al., 2013; Liu et al., 2014; Sabarwal & Terrell, 2008).

Our finding that, after adjusting for explanatory variables, businesses owned by women did not underperform in comparison to those owned by men corroborates previous research. In line with Watson and Robinson (2003), our results also indicate that risk aversion explains the lower performance of SMEs owned by women. Thus, our study confirms that differences in the performances of female- and male-owned firms disappear when appropriate performance measures are used and important demographic differences (such as industry, experience and hours worked) are controlled for in the models (Robb & Watson, 2012).

Political embeddedness is not a common phenomenon. It occurs in transition economies more than in mature economies, although it is often located within the grey (unofficial) sphere. The political embeddedness of female business owners has received little attention in the literature, and so the results of our study cannot either corroborate or contradict prior findings. As previous research had found mediating effects of bank loans on the relationship between gender and firm performance, we used the same statistical techniques to investigate the effects of political embeddedness. We found a similar mediating effect, and our empirical results support hypotheses H2.1 and H2.2, confirming that political embeddedness at both the personal and firm levels mediates either separately or in parallel the relationship between gender and firm performance. In contrast, prior research on political embeddedness, which took no account of gender, showed a positive effect on firm performance (Li et al., 2019; Luo & Dong, 2013; Michelson, 2007; Mu & Jiang, 2018; Wang et al., 2018). Our finding that businesswomen were less likely to be personally political embedded is in line with the relatively low rate of personal political embeddedness of women in China as a whole (National Bureau of Statistics, 2019).

The lower rate of political embeddedness at the firm level for businesses owned by women is more difficult to explain, since it is not a matter of personal status. A study that explored political connections at the firm level in China (Zhang & Guo, 2019) found a significant effect on firm performance but provided no analysis in regard to gender differences. We suggest that although political embeddedness may help a firm in obtaining resources, it also entails external involvement in decision-making, which increases uncertainty. Since women are risk averse and more inclined to avoid uncertainty than men (Powell & Ansic, 1997; Watson & Robinson, 2003), they are less likely to seek to establish a branch of the political party in their business and thus less likely to be politically embedded at the firm level.

## 5.1 Robustness Checks

We employed two rigorous statistical methods to test our results, and both the Tobit regression and the Blinder–Oaxaca decomposition support our hypotheses. In order to check the robustness of our results, we carried out additional operations using the same analytical methods, taking the dependent variable as the number of a firm’s employees (available from the CPES data) instead of operations income, and using the natural logarithm of the number reported at the end of the previous year. These additional tests replicated the results presented above, indicating their robustness. We therefore conclude that gender has a significant positive effect on enterprise performance, that the influence has decreased over time, and that firm political embeddedness and personal political embeddedness mediate the relationship between gender and performance.

## 5.2 Theoretical Contributions and Implications

The issue of the impact on firm performance of gender and political embeddedness has been under-researched, although separately each factor has received considerable attention. The present study explores the relationship between gender and political embeddedness and their effect on firm performance in the Chinese context, and it makes several theoretical contributions.

First, we support liberal feminist theory by identifying mediating factors related to structural obstacles that explain the underperformance of enterprises owned by women. Second, by adding the firm level to the construct of political embeddedness, we expand its theoretical scope (Okhmatovskiy, 2010) in terms of government expectations of firms (Oliver, 1997). Third, building on the work of Watson and Robinson (2003), who after adjusting for risk found no significant difference between the performances of male- and female-controlled SMEs, we extend the discourse regarding women’s risk aversion to the field of political embeddedness.

In light of the mediating effect on firm performance of political embeddedness at both the personal and firm levels, we point out a number of practical implications. Women business owners may decline to open a branch of the party in their firms on the grounds that this entails higher uncertainty, which risk aversion makes them unlikely to embrace. In spite of the potential drawbacks, we encourage women business owners in China to pursue political involvement. For political embeddedness at the personal level, they should seek nomination to either the PC or the CPPCC. Policy makers and mentors should also look for ways to mitigate any disproportionate effects in relation to businesswomen. The findings of this study indicate that political embeddedness will further elevate the performance of businesses led by women in order to substantiate and sustain the recent trend of improved operations income.

## 5.3 Limitations and Future Research Directions

Although this study makes several notable contributions, it is not without limitations. First, the data are based on self-reported responses from business owners. Therefore, although the CPES is a widely used database (e.g., Liang & Gong, 2016; Zhang & Guo, 2019), it should be noted that it may include biased data. Second, our measure of political embeddedness at the firm level is based on whether a firm has its own branch of the party. This may have different consequences depending on local contexts, and future research should identify additional measures of political connections at the firm level. In China, political embeddedness is official, but in many other counties political connections and their benefits exist with no official regulation and are therefore not easy to investigate or measure. Finally, our research relates to the Chinese context, in which *guanxi* plays a significant role regarding women-led firms (Hussain et al., 2010). The impact of specific aspects of Chinese culture on working women (such as the perceived high level of family demands; Choi & Chen, 2006) limits the generalizability of our findings to different cultures or to other economies in transition. We therefore recommend further research on the effect of political embeddedness on businesses owned by women in other countries.

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