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# Family Influence and Environmental Proactiveness of Family Firms in China: A Mixed Gamble Perspective

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**ABSTRACT** Built upon the mixed gamble perspective, we used a recent survey on Chinese family firms (FFs) and found that increased family influence lowers Chinese FF environmental proactiveness, as they show a peculiar tendency to take a financial view rather than a socioemotional wealth view. Moreover, we found that increased resource endowment attenuates this tendency, whereas provincial marketization strengthens it. However, entrepreneur reputation does not have a significant moderating effect. Overall, the study enriches an understanding of environmental proactiveness for FFs, organizational heterogeneity, and institutional differences. It also introduces new elements into the mixed gamble framework.

**KEYWORDS** China, environmental proactiveness, family firms, mixed gamble, socioemotional wealth

**ACCEPTED BY** Deputy Editor Peter Ping Li

## INTRODUCTION

Heightened concern about environmental sustainability has driven explorations of the antecedents of organizational environmental proactiveness (Dou, Su, & Wang, 2019), which reflects investments in pollution-preventing equipment and/or technology that is not required by government regulation (Berrone, Cruz, Gómez-Mejía, & Larraza-Kintana, 2010; McWilliams & Siegel, 2001). Inferred from studies of corporate social responsibility (CSR), entrepreneurs' benevolent care about the environment (McWilliams & Siegel, 2001) and political dependence (Marquis & Qian, 2013) are, for instance, believed as critical antecedents. Family firms (FFs), being the most prevalent business entities around the world (De Massis, Frattini, Majocchi, & Piscitello, 2018), have also received considerable

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attention in terms of their stances toward environmental protection (Berrone et al., 2010).

However, there is a lack of consensus on whether family influence steers FFs to be environmentally proactive. While family influence represents the extent of family owners' interactions with, and influences on, the business (Diaz-Moriana, Hogan, Clinton, & Brophy, 2019), prior research has presented inconsistent results that arises from comparison between public-listed FFs and non-FFs.

Resolving such inconsistency is quite pressing for small- to medium-sized FFs located in China. This is largely because environmental proactiveness is costly (Berrone et al., 2010), while resources are generally scarce and survival is hard to maintain in the country (Li, Liu, & Qian, 2019; Qian, Liu, & Wang, 2018; Yiu, Hoskisson, Bruton, & Lu, 2014a). Moreover, prior findings from public-listed firms, we suspect, may not reflect those FFs' authentic benevolence as they may do so instrumentally because of greater visibility and monitoring (Newbert & Craig, 2017). The application of socioemotional wealth (SEW) has also been criticized as being too restrictive in that FFs should have multiple objectives in addition to those nonfinancial family interests (Newbert & Craig, 2017). However, very little research has dealt with Chinese FFs where the demand of CSR is lower (Du, 2015; Wang & Qian, 2011). Against this backdrop, the present study aims to investigate whether family influence can account for Chinese FFs to be environmentally proactive and whether heterogeneity among FFs moderates their environmental initiatives.

We propose two research advancements in our study. First, insufficient attention has been given to the variations on environmental issues for FFs. In fact, the use of family ownership proportion, instead of categorical comparison, would better depict the incentives and power of the focal family in shaping the strategy according to its preference (Miller, Le Breton-Miller, & Lester, 2010). Thus, as recommended recently by scholars (e.g., Daspit, Chrisman, Sharma, Pearson, & Mahto, 2018; Nason, Mazzelli, & Carney, 2019), we explore the effects of the degree of family influence among FFs. Second, prior studies have treated family owners as either being concerned with SEW or with financial goals without due consideration of both (Gómez-Mejía, Patel, & Zellweger, 2018). Instead, we posit that any managerial decision of FFs should be made according to a mixed gamble; that is, firms would balance the trade-offs between nonfinancial and financial interests simultaneously. We thus argue that family influence reflected by family ownership would restrain corporate environmental initiatives due to heightened concern over the loss of SEW and financial aspects.

However, heterogeneous internal factors and external contingencies can emerge from either the SEW and financial perspectives or the situated institutional perspective (Ge & Micelotta, 2019), perspectives being the key factors that determine the relative value of gains and losses and the perceived likelihood of each outcome (Martin, Gómez-Mejía, & Wiseman, 2013). Accordingly, the reputation of entrepreneurs, resource abundance, and institutional conditions all may

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moderate FFs' calculation of such proactiveness. Based on a sample of Chinese FFs, our study has largely confirmed the proposed hypotheses.

Overall, the findings advance our knowledge on the relationship between family influence and environmental proactiveness. First, they help explain the divergence of views on the issue while presenting some new heterogeneities that enrich the variances of FFs called by family business (FB) scholars (Daspit et al., 2018; Nason et al., 2019). Second, this study challenges the applicability of the SEW perspective at least for environmental proactiveness in China, which resonates with recent criticisms of SEW (e.g., Chua et al., 2015; Newbert & Craig, 2017). Third, we pinpoint an important caveat that economic liberty does not naturally transform into societal norms of environmental proactiveness. Finally, we augment the research from public-listed firms to private-owned ones, thus responding to calls for a more thorough examination into the major configurations of FFs (Cruz, Larraza-Kintana, Garcés-Galdeano, & Berrone, 2014).

# THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

#### FFs' Environmental Proactiveness

While firm size and performance, and external conditions like regulatory pressures, might be potent factors (Wang & Qian, 2011), CSR studies generally have conjectured that the owners and the ownership structure may saliently direct organizational environmental proactiveness (Dou et al., 2019). For instance, McWilliams and Siegel (2001) argue that organizational environmental proactiveness reflects entrepreneurs' benevolent care about society and the environment. On the contrary, Marquis and Qian (2013), who take an instrumental political dependence perspective, conjecture that private-owned enterprises are more likely to issue CSR reports to obtain goodwill from the government.

FFs, which are entities closely controlled and governed by a family (Chang & Shim, 2015), have also received considerable attention on their stances toward CSR. However, very few studies have been found to directly deal with the relationship between family influence and environmental proactiveness (Dou et al., 2019), particularly for small- to medium-sized FFs in emerging economies (Berrone et al., 2010; Pisani, Kourula, Kolk, & Meijer, 2017). Prior studies have presented inconsistent results by mainly comparing public-listed FFs and non-FFs and claimed that the categorical form can capture family influence, albeit family influence represents the extent of family owners' interactions with, and influences on, the businesses (Diaz-Moriana et al., 2019). Even the question on whether family influence positively or negatively impacts general CSR has still remained at issue.

On the one hand, proponents have predicted a positive relationship between family influence and proactiveness for the prevention of pollution, the prediction built upon the SEW perspective (Berrone et al., 2010). Specifically, FFs will take

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special consideration to maintain the family-centered nonfinancial aspects like community image and organizational reputation other than financial returns (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007). Thus, they may demonstrate proactive attitudes toward environmental issues (Cruz et al., 2014).

On the other hand, opponents have indicated that family members might be less likely to be environmentally proactive because heavy stakes in their organizations lead to a conservative logic (Kellermanns, Eddleston, & Zellweger, 2012). Since environmental investments by FFs are a proactive initiative that satisfies anticipated future expectations from society at large (Berrone et al., 2010; McWilliams & Siegel, 2001), engagement in those activities represents risky investments that may bring unnecessary uncertainties and costs (Cennamo, Berrone, Cruz, & Gómez-Mejía, 2012). Therefore, FFs may be inclined to spend less on environmental protection given their inherent conservative and parsimonious characteristics of resource management (Carney, 2005).

The different views above encounter greater ambiguities when normative factors are considered. Most previous studies have focused on developed economies but much less on emerging ones (Pisani et al., 2017), with the latter experiencing economic liberalization and changes unequally across regions (e.g., Liu & Wang, 2021; 2019; Qian et al., 2018; Yiu et al., 2014a). Moreover, most of their sampled firms are public-listed firms rather than private-owned FFs, where the former ones are not the main form of FFs (Cruz et al., 2014). Thus, we believe that the corresponding supplementation does matter significantly because contradictory evidence may challenge the SEW perspective on environmental proactiveness into which those FFs are engaged, the perspective emphasizing their wholehearted care about the environment and the entire society (Berrone et al., 2010).

We deem that the key to the debates lies in the deficient attention of variations among FFs as well as on a lack of balanced view toward SEW and financial status. On the one hand, families vary on their ownership control, thus presenting distinct incentives and power to influence focal firms, albeit FFs are defined by a certain ownership threshold (Miller et al., 2010). To precisely depict the behaviors of FFs, the exact family ownership should thus serve as a better indicator than categorical comparisons (Diaz-Moriana et al., 2019; Miller et al., 2010).

On the other hand, FFs care about both SEW and financial interests. Admittedly, the SEW that captures those family-centered nonfinancial goals does matter significantly for FFs in environmental performance (Berrone et al., 2010). However, nonfinancial goals cannot be kept if financial ones are not achieved, as they are interrelated with, but contradictory to, each other to some extent (Gómez-Mejía, Campbell, Martin, Hoskisson, Makri, & Sirmon, 2014), indicating that SEW should not be treated as a zero-sum selection that involves completely nonfinancial (without financial) consideration. Instead,

family principals would certainly make a trade-off between them (Newbert & Craig, 2017).

# Mixed Gamble Perspective

While previous research conceives that FFs prioritize SEW over financial interests (Gómez-Mejía et al., 2007), financial peril would nonetheless jeopardize the maintenance of SEW and even cause a total loss of SEW (Gómez-Mejía et al., 2014; Gómez-Mejía et al., 2018). In fact, FFs have to confront the situation of a mixed gamble in which they need to take into account the gains from both SEW and financial perspectives whenever they make a strategic decision (Chua et al., 2015; Gómez-Mejía et al., 2018).

More specifically, the mixed gamble perspective suggests that FFs' decisions are made in reference to the weight of potential gains and losses in both nonfinancial and financial aspects (Gómez-Mejía et al., 2014). Served as an extension of the traditional SEW approach, the mixed gamble perspective is built on the concept of loss aversion such that family principals prefer decisions that could either preserve their perceived wealth or reduce anticipated losses (Martin et al., 2013). As such, FFs face a unique trade-off between nonfinancial and financial utilities as compared to that of non-FFs, albeit they are both influenced by similar financial contingencies (Gómez-Mejía et al., 2018). Moreover, the calculation of mixed gamble is a function of the valuations and the likelihood of each outcome (Martin et al., 2013). With respect to FFs particularly, contextual heterogeneities can emerge from either the SEW and financial perspectives (Chua et al., 2015) or the situated institutional perspective (Ge & Micelotta, 2019), the perspectives covering the key contingencies that an FF would face.

#### **Institutional Characteristics of China**

China is selected as the research context. Like many other emerging economies, China has underdeveloped regulations (Yiu et al., 2014a), thus allowing family principals to have greater discretion to realize their interests as well as greater room and incentives to socialize with governmental officials. As such, FFs in China constitute an ideal context in which we are able to explore whether family influence triggers authentic environmental proactiveness as compared to FFs that are located in industrialized countries (i.e., US, Japan, Germany, etc.) where they may have other considerations for environmental proactiveness.

However, China has special characteristics. While China has long been considered as a model for other emerging economies to activate FB activities, it is mainly a state-directed emerging economy. Different from most other countries in the world, China has seen the emergence of FFs only after the economic reform and opening policy initiated by Deng Xiaoping in the late 1970s. Therefore, most FFs are still young and family control is not yet passed on to

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the next generation. Moreover, because of the less favorable conditions for private business, FFs in China are more concerned about their survival and financial stakes, given their disadvantaged position and legitimacy status as compared to state-owned enterprises (SOEs; Li et al., 2019). This indicates that they may care more about financial aspects than about nonfinancial ones. In other words, their demand for SEW may possibly be relaxed or not tense. The unequal, underdeveloped institutions that exist in different regions also highlight the influence of the government such that it can both endorse legitimacy to, and appropriate profits from, those FFs, thereby altering their evaluations of the importance of SEW. While such institutional characteristics may confine the generalizability of the findings to other state-led emerging economies like Vietnam, the contextualization is ideal as it can best explore whether prior theoretical propositions generated from industrialized countries are generalizable. That, in turn, helps identify the theoretical boundary of the mixed gamble framework.

# **Hypotheses Development**

We posit that greater family influence should indicate a lower propensity of Chinese FFs to show environmental proactiveness. First, FFs generally have limited resources, especially in human ones (Berrone, Cruz, & Gómez-Mejía, 2012). This is particularly true for those that are located in China where a highly efficient labor market is yet to be developed (Qian et al., 2018), and the majority of talents prefer SOEs for more stable benefits, children's education allowance, and other types of support (People.cn, 2013). Thus, human resource constraints may prevent Chinese FFs from taking proactive initiatives. As they are more likely to entrench family control (Miller et al., 2010), investments in new environmental technologies and products suggest a possible loss of power to outside professionals. As such, greater family influence implies greater trust and preference for family managers than for non-family ones, given that family principals put the family at the center of everything (Gómez-Mejía et al., 2007).

In the meantime, proactive investments in environmental equipment and/or technology are certainly costly expenditures (Berrone et al., 2010), thus making performance vulnerable to those (families) that are deficient in financial resources (Gómez-Mejía et al., 2018). Such reluctance to take proactive initiatives is intertwined with capricious policies that are characteristic of China (Li et al., 2019; Yiu et al., 2014a). In particular, developing bold environmental initiatives may jeopardize firm performance particularly in the environment of changing policies because firms may over-spend, and proactive investment does not bring in direct economic returns (Cennamo et al., 2012). FFs, especially those of China, will find survival as a top priority, given that they are born with more or less unfavorable treatments than their SOE counterparts (Li et al., 2019; Qian et al., 2018). Insofar as SEW would disappear if FFs fail to survive (Gómez-Mejía et al.,

2018), family-influenced firms tend to preserve their financial resources unless there are ardent environmental expectations and strong demand for it.

In a nutshell, proactively investing in environment-friendly technologies and products beyond legislative compliance may adversely affect their SEW endowment as well as financial performance, thus leading to a loss-loss situation. These together create a dismal situation in the gamble, the situation consequently leading Chinese FFs to reduce engagement in such proactive activities. Thus, we propose:

Hypothesis 1: Family influence reduces the environmental proactiveness of an FF.

## **SEW and Financial Status Contingencies**

The mixed gamble is certainly dynamic in nature, and more weight that is placed on either side of SEW contingencies and financial adequacy may therefore help adjust FFs' calculation of environmental proactiveness. Although there might exist numerous factors that could affect the above considerations, family owners have special interest in protecting family image, and the maintenance of owners' reputation is thus a key dimension of SEW for FFs (Chua et al., 2015; Gómez-Mejía et al., 2007; Newbert & Craig, 2017). In parallel, resource abundance inferred from a financial status perspective represents a greater allowance for pursuing SEW at the cost of financial reserves. The two contingencies together constitute the fame and wealth concern of every Chinese FB owner. Because of the special characteristics of the Chinese economy, governmental intervention would also function as a salient contingency that determines the calculation.

The first critical contingency that influences the calculation of mixed gamble is entrepreneur reputation. Because external stakeholders tend to 'perceive the firm as an extension of the family itself' (Cruz et al., 2014: 1299), the principals of FFs have a strong desire to preserve their personal reputation (Nason et al., 2019), which constitutes the family's identity recognized by the community, identity recognition being another key dimension of SEW (Gómez-Mejía et al., 2007). Entrepreneur reputation should increase the interest alignment between family and external stakeholders (Gómez-Mejía et al., 2018; Newbert & Craig, 2017), which consequently changes the valuations of being environmentally proactive.

Therefore, we suspect that the high reputation of entrepreneurs should help attenuate the negative relationship between family influence and environmental proactiveness. On the one hand, entrepreneurs (owners) usually reside in the same community of their FFs, and they would work harder to preserve their hard-earned reputation (Li, Au, He, & Song, 2015). In doing so, they will proactively initiate environmentally friendly projects to maintain a good relationship with the community, given that reputation implies a strong tie between the entrepreneur and community (Berrone et al., 2010). This is true, especially for FFs with

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greater family influence as the identity of the family is closely tied to the focal firm (Cruz et al., 2014).

Furthermore, FFs with high-reputation entrepreneurs are generally faced with higher expectations from external stakeholders. Although a high reputation means goodwill obtained from external stakeholders, high-reputation entrepreneurs and their firms are subject to a plethora of monitoring and scrutinization because of pervasive media coverage (Ge & Micelotta, 2019). Family principals of an FF, given a higher level of family influence, are more likely to be identified, and held responsible for any irresponsible behaviors (Cruz et al., 2014), which shake their valued SEW in family control and family reputation simultaneously. To account for the anticipated losses, they would do more than the common compliances to safeguard their highly valued reputation of FFs with greater family influence (Gómez-Mejía et al., 2007).

Speaking of China, a state-led economy with underdeveloped institutions in particular, the government serves as the main body that recognizes and confers the individual's reputation (Qian et al., 2018; Yiu et al., 2014a). For instance, the Chinese government endorses entrepreneurs to be members of the National Political Congress or the People's Political Consultative Conference (Wang & Qian, 2011), which are the legislative and advisory bodies that help the government determine new policies (Marquis & Qian, 2013). Therefore, entrepreneur reputation that manifests in government-based recognition would increase the valuation of being environmentally proactive and, if the FF does not act proactively, the likelihood of making a loss in both SEW and financial aspects:

Hypothesis 2: Entrepreneur reputation moderates the negative relationship between family influence and environmental proactiveness such that it is attenuated with increase in entrepreneur reputation.

Given that investments in environmental pollution prevention may not be compensated by reliable returns (Cennamo et al., 2012; Gómez-Mejía et al., 2018), the influential factor derived from the financial perspective in the mixed gamble is the resource abundance of FFs. The evaluation serves as the other end of the mixed gamble in that it demarcates organizational capabilities to achieve the expected value on the focal decision. In essence, FFs, like non-FFs, should have multiple operational objectives (Newbert & Craig, 2017) where being proactive in environmental investments certainly consumes resources that can be used for other needs. That is, any satisfaction in SEW should be conditioned on the sustainability of FFs' operations (Gómez-Mejía et al., 2014).

We deem that resource abundance increases the valuations of SEW particularly for FFs with greater family influence as it helps adjust the balance of mixed gamble by alleviating the anticipated losses on financial and SEW aspects when FFs are environmentally proactive. When FFs with great family influence possess sufficient available resources, threats from financial constraints will also decrease, so the potential agency costs of releasing their powers to outside managers will

decrease accordingly. This is true especially for family principals in China who used to spend extra money to keep watch on those outside managers who make decisions, given that potential outside managers are small in number, and they have uncertain qualities due to the underdeveloped labor market (Yiu et al., 2014a).

Particularly, resource abundance provides greater financial support for trial and error, reducing concern over outside managers' misbehaviors that may hurt the family interests and organizational performance. That is, family decision-makers are provided with greater allowances to find the most suitable managers and thus with greater room to take environmental initiatives to attract community recognition and other SEW needs (Gómez-Mejía et al., 2007). Under such circumstances, investing ahead of regulation requirements becomes an endeavor to help sustain the SEW endowments in the long-run especially under greater family influence (Gómez-Mejía et al., 2018), the investment constituting potential gains in nonfinancial aspects as well. After all, family principals tend to perceive their businesses as an extension of themselves, particularly when their families have substantial influence (Ge & Micelotta, 2019), and thus they would take more initiative when financial constraints are relaxed.

At the same time, FFs with abundant resources might be expected to take more proactive initiative. People normally understand that firms with poor performance should preserve resources to improve their business operations and would generally ask for more resources when they are performing better (Wang & Qian, 2011). FFs with greater family influences are more likely to become targets because of their stronger integration between the focal family and the firm (Cruz et al., 2014). If it happens, being environmentally proactive becomes highly relevant for family principals to sustain their SEW and profits, meaning FFs with abundant resources would face more potential losses in both nonfinancial and financial aspects. In view of the above two mechanisms, we propose that resource abundance should negatively moderate the relationship between family influence and environmental proactiveness.

Hypothesis 3: Resource abundance moderates the negative relationship between family influence and environmental proactiveness such that it is attenuated with increase in resource abundance.

The reluctance for proactive environmental action should be further reinforced by the lack of governmental intervention, which disturbs the valuation and likelihood of outcomes in the calculation of mixed gamble. In particular, frequent governmental intervention should indicate a great uncertainty of losses for not being environmentally proactive, given that FFs are especially sensitive to institutional conditions (Ge & Micelotta, 2019; Gómez-Mejía et al., 2014). Those uncertain government fines and punishments would hurt their cherished organizational performance and nonfinancial interests like family reputation.

This is because China is different from industrialized economies where the whole society takes the same (rigid) standards to sanction misbehaviors toward the environment (e.g., Gómez-Mejía et al., 2018). Therefore, we hardly find any unethical and

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unlawful behaviors escape regulatory judgement. Instead, because of unequal and unbalanced regional advancement (Qian et al., 2018), interpersonal connections may supersede as thresholds to loosely pronounce the guilts of socially irresponsible behaviors in China, creating an additional conduit for governmental appropriation. For instance, some Chinese firms have cooked their accounting books to enjoy lower taxes, albeit such acts clearly violate the law (Stuart & Wang, 2016).

It is worthy of reiterating that environmental proactiveness is beyond regulatory mandates. In a more liberal region, family decision-makers feel invulnerable to confrontation of haphazard fines as long as they satisfy the basic requirements, thereby reducing potential losses in both financial and nonfinancial aspects. This is mainly because the region with high degrees of marketization is generally characterized by the high quality of government fairness and transparency (Qian et al., 2018). In comparison, FFs would strive to maintain good interpersonal relationships with local officials to obtain special favorability in those less transparent regions (Du, 2015). Such concern is more severe for FFs with greater family influence since higher family ownership suggests that more family interests (i.e., both SEW and financial utilities) are at stake (Miller et al., 2010). In other words, pro-market reforms in the organization's location would reduce information asymmetries and uncertainties to family principals (Banalieva, Eddleston, & Zellweger, 2015).

Given that Chinese FFs usually prioritize survivability over others (Du, 2015), they normally imitate practices from others within the national boundaries (Cruz et al., 2014) while restraining their environmental proactiveness. This is largely because they believe not doing so will help save financial resources without experiencing threats of sanctions. At the same time, they have to maintain the current resource endowments to deal with the loss of competitive advantage under the reforms since pro-market changes will nullify the accumulated social capital, especially for FFs with greater family influence (Banalieva et al., 2015). In a nutshell, regional marketization reduces the uncertainty of losses in both SEW and financial aspects when the FFs are not environmentally proactive. As such, FFs with greater family influence would be more likely to reduce those unnecessary investments. Therefore,

Hypothesis 4: Regional marketization moderates the negative relationship between family influence and environmental proactiveness such that it is strengthened with increase in regional marketization.

#### **METHODS**

To test the hypotheses, we used the 2016 (most recent) available data on Chinese private enterprises conducted by the All-China Industry and Commerce Federation (ACICF) to capture the most recent business landscape for FFs. The data are derived from surveys that are conducted periodically and have been used widely in previous studies (e.g., Ge & Micelotta, 2019; Yang & Tang,

2020). The surveys produce the most comprehensive dataset as they target private enterprises in all of China's provinces using a stratified sampling method. Interviews with 8,114 firms in different industries were completed from all 31 provinces and metropolitan areas of China, representing about 0.04% of the population of Chinese private firms in 2016.

However, the identification of FFs is not easy as there is no consensus on how FFs are defined. Nevertheless, the majority of them (about 66%) are based on the ownership method (Diaz-Moriana et al., 2019). That is, FFs require family principals to maintain significant control and influence over the focal firms (Chang & Shim, 2015), and thus, we use the same method for the definition of FFs. Following previous studies that treat FFs as those with at least 5% ownership and at least one top management position controlled by nuclear family members (Chang & Shim, 2015), we extracted our sample from the survey. After a casewise deletion of observations that had missing values on the key variables and dropping of one observation that had over 100% ownership (i.e., the responses may be invalid since the sum of ownership should not surpass 100%), we ended up with a final sample of 2,250 firms.

#### Main Variables

Environmental proactiveness. As pointed out earlier, environmental proactiveness captures an active stance toward the environment, indicating that the FF tries to develop substantive environment-oriented initiatives and investments (Cennamo et al., 2012). It is a stance on whether the focal FFs do so or not. We measured environmental proactiveness using a dummy variable; that is, 1 for the firm that proactively invested in new environmental technologies and/or products in the year and 0 otherwise. Categorical variables have been frequently used for the cognitive intention like proactive one (Schmutzler, Andonova, & Diaz-Serrano, 2019). Given the survey has no connection with subsidies or taxes, the surveyed firms are less likely to misstate on this question (Stuart & Wang, 2016). [1]

Family influence. We measured family influence by the percentage of ownership held by the nucleus family (Cruz et al., 2014). While previous studies have mainly relied on the categorical comparison, family influence essentially represents the extent of family owners' interactions with, and influence on, the business (Diaz-Moriana et al., 2019), which should be largely determined by their ownership control and/or managerial control. We have checked and confirmed that all sampled firms in this study were family managed ones, and thus, the dimension of management positions fails to capture the difference in family influence in the present sample. [2]

Entrepreneur reputation. We measured entrepreneur reputation by the political status reported in the survey. Without efficient intermediary markets, governments in

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China serve as the main bodies that recognize and confer individual's reputation (Qian et al., 2018; Yiu et al., 2014a). Previous studies have revealed that the membership in the National Political Congress and/or Political Consultative Conference brings the highest prestige and reputation, and the majority of the richest Chinese business people have held positions in those two bodies (Ifeng, 2012; Marquis & Qian, 2013). We therefore used a dummy variable that equals 1 if the entrepreneur has such membership and 0 if not.

Resource abundance. Following previous studies (e.g., Gentry, Dibrell, & Kim, 2016), we operationalized the variable using the natural logarithm of the volume of net assets in the prior year.

Regional marketization. We measured regional marketization using the index that reflects the market development at the provincial level. It captures unequal institutional developments across regions, with such inequality being characteristic of most emerging economies (Qian et al., 2018). The data on regional marketization were derived from China's National Economic Research Institute report in 2016.

#### **Control Variables**

We controlled for additional variables at different levels. At the governmental level, we measured *governmental subsidies* using the question that asks how often the respondent had obtained governmental subsidies with 1 indicating 'never', 2 'occasionally', and 3 'constantly'. We measured *government influence* by the exact percentage of ownership possessed by the government or SOEs (Liu & Wang, 2021; Qian et al., 2018).

The organizational characteristics are reflected by *firm size* and *age*: the former being measured by the natural logarithm of annual sales in the previous year (Berrone et al., 2010) and the latter by the natural logarithm of years since its foundation (Cruz et al., 2014; Wang, Jiang, & Dong, 2021). We also controlled for *firm performance* using the natural logarithm of net profits in the previous year.

At the entrepreneurial level, we controlled for entrepreneur age since older entrepreneurs may be more conservative in initiating risky projects like proactive environmental investments. We exactly followed the survey's classification of owner age into five categories: 1 for owner age being 35 years and/or below 35 years old and 5 for the age being above 66. To ensure the results are not masked by entrepreneurs' benevolent care about society and the environment (McWilliams & Siegel, 2001), we further accounted for *environmental concern* using the question that asks their evaluation of the need for environmental protection based on a five-point Likert-type scale (1 = 'strongly disagree' and 5 = 'strongly agree').

We also accounted for perceived environmental pressure, firm location, and industry segment of a firm. We inversely coded the original item of perceived

environmental pressure with a higher value suggesting greater pressure (using a five-point Likert-type scale: 1 = 'strongly disagree' and 5 = 'strongly agree'). We conducted a principal component factor analysis of the five sub-indices measuring the pressure from the five (i.e., government, community, consumer, industry, and financing) sources. The eigenvalue of 4.17 for one factor and the smallest factor loading of 0.89 indicate the validity of our measurement.

Firm location may affect, to a certain extent, economic performance as it is related to the location advantage of a region where the firm operates (Wang & Liu, 2021; Wang, Ma, & Hu, 2018). Therefore, we introduced *regional* dummies reflecting whether the firms are located in the East, Middle, or West regions of China. Finally, we used *industry* dummies, indicating whether the firms belong to manufacturing, real estate, finance, or conglomerate groups reported in the survey.

#### RESULTS

Because of the categorical attribute of the dependent variable, we adopted a *-logit*-command in Stata with robust standard errors to account for heteroscedasticity.<sup>[3]</sup> Table 1 reports the descriptive statistics for all of the variables. The negative and significant correlation between family influence and environmental proactiveness lends basic support to our baseline hypothesis ( $\rho = -0.06$ , p < 0.001). Despite the pair of the correlation between resource abundance and firm size exceeds the value of 0.5, the variance inflation factor (VIF) test confirms no significant problem of multicollinearity (mean VIF = 1.39, max VIF = 2.34).

We test the hypothesized relationships hierarchically as reported in Table 2. Model 1 introduces the control variables only. As predicted, the coefficient of governmental subsidies is positive and significant ( $\beta = 0.258$ , p = 0.001), thus corroborating that the government dominates in social spheres as well (Qian et al., 2018; Yiu et al., 2014a). Furthermore, perceived environmental pressures are also found to be positively and significantly associated with environmental proactiveness ( $\beta = 0.374$ , p < 0.001), tallying with the previous prediction.

Model 2 adds the independent variable of family influence to test Hypothesis 1. We offer full support for the hypothesis that family influence will significantly reduce proactiveness in environmental investment ( $\beta = -0.006$ , p = 0.020). More specifically, 1% increase in family ownership would make the firm decrease environmental investment by about 0.6%, or other words, multiply the odds of being environmental proactive by 0.99.

The next four models (Models 3–6) introduce the interaction terms hierarchically, where all are formed by the mean-centered individual terms to mitigate any potential multicollinearity. Model 3 tests Hypothesis 2 that the negative effect of family influence on the environmental proactiveness is attenuated with increased entrepreneur reputation. However, the results show that the interaction effect is positive but not significant even at the 10% level ( $\beta$  = 0.005, p = 0.277), thus failing to support Hypothesis 2. The insignificant result may be due to the

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Table 1. Descriptive statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Environmental proactiveness	0.16	0.37	1.00												
2. Family influence	84.10	25.58	-0.06***	1.00											
3. Entrepreneur reputation	0.27	0.44	0.18***	-0.04**	1.00										
4. Resource abundance	9.27	0.59	0.24***	-0.11***	0.33***	1.00									
5. Regional marketization	7.58	1.82	0.07***	0.01	0.03**	0.10***	1.00								
6. Governmental subsidies	2.16	0.87	0.10***	-0.02	0.05***	0.08***	-0.00	1.00							
7. Governmental influence	0.66	5.27	0.04**	-0.22***	0.01	0.16***	-0.02	0.02	1.00						
8. Firm size	8.97	0.80	0.23***	-0.12***	0.35***	0.70***	0.15***	0.09***	0.09***	1.00					
9. Firm age	2.01	0.85	0.15***	-0.04**	0.36***	0.29***	0.21***	0.02	0.02	0.34***	1.00				
10. Firm performance	14.22	0.17	0.01	-0.01	0.01	0.00	0.01	-0.01	0.00	0.01	-0.01	1.00			
11. Entrepreneur age	2.51	0.97	0.07***	-0.06***	0.26***	0.15***	0.07***	0.03**	-0.00	0.17***	0.36***	-0.01	1.00		
12. Environmental concern	2.98	1.14	0.03*	-0.02	0.05***	0.05***	-0.01	0.04**	0.01	0.07***	0.05***	-0.01	0.06***	1.00	
13. Perceived environmental	0.01	1.00	0.16***	-0.01	0.06***	0.11***	0.05**	0.04**	0.04	0.10***	0.08***	0.00	0.02	-0.08***	1.00
pressure															

Notes:  ${}^*p < 0.05$ ,  ${}^{**}p < 0.01$ ,  ${}^{***}p < 0.001$ .

Table 2. Regression results

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
1. Family influence		-0.006*	-0.006*	-0.007**	$-0.005^{+}$	-0.006*
		(0.020)	(0.014)	(0.005)	(0.077)	(0.025)
2. Family influence ×			0.005		0.004	
entrepreneur			(0.277)		(0.455)	
reputation						
3. Family influence ×				0.006*		0.006*
resource abundance				(0.043)		(0.048)
4. Family influence ×					-0.003*	-0.003*
regional marketization					(0.031)	(0.016)
5. Entrepreneur	0.417**	0.437**	0.406**	0.423**	0.439**	0.395**
reputation	(0.003)	(0.002)	(0.004)	(0.002)	(0.002)	(0.005)
6. Resource abundance	0.318+	0.303+	0.318+	0.383**	0.285+	0.377**
	(0.078)	(0.090)	(0.099)	(0.003)	(0.096)	(0.004)
7. Regional	-0.060	-0.056	-0.056	-0.055	-0.046	-0.045
marketization	(0.214)	(0.245)	(0.249)	(0.259)	(0.347)	(0.367)
8. Governmental	0.258**	0.253**	0.250**	0.250**	0.261***	0.257**
subsidies	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)
9. Governmental	$0.020^{+}$	0.015	0.017	0.018+	0.016	0.019+
influence	(0.056)	(0.143)	(0.135)	(0.060)	(0.133)	(0.058)
10. Firm size	0.341**	0.312**	0.304*	0.287**	0.319**	0.283**
	(0.002)	(0.005)	(0.010)	(0.003)	(0.003)	(0.004)
11. Firm age	0.268**	0.275**	0.301**	0.274**	0.276**	0.303**
	(0.008)	(0.007)	(0.003)	(0.007)	(0.007)	(0.003)
12. Firm performance	0.245**	0.231**	0.225*	0.230**	0.236**	0.231**
	(0.006)	(0.008)	(0.010)	(0.009)	(0.007)	(0.009)
13. Entrepreneur age	-0.047	-0.055	-0.057	-0.054	-0.052	-0.053
	(0.515)	(0.441)	(0.431)	(0.453)	(0.467)	(0.466)
14. Environmental	0.077	0.086	0.094	0.090	0.094	$0.108^{+}$
concern	(0.196)	(0.147)	(0.118)	(0.131)	(0.115)	(0.075)
15. Perceived environ-	0.374***	0.378***	0.380***	0.374***	0.381***	0.379***
mental pressure	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
16. Firm location	Control	Control	Control	Control	Control	Control
17. Industry	Control	Control	Control	Control	Control	Control
Obs	2,250	2,250	2,250	2,250	2,250	2,250
Prob > Chi <sup>2</sup>	0.00***	0.00***	0.00***	0.00***	0.00***	0.00***
Wald chi <sup>2</sup>	239.15	237.95	237.75	245.66	238.13	246.49
Pseudo $R^2$	0.14	0.15	0.15	0.15	0.15	0.15

*Notes*:  ${}^{+}\rho < 0.1$ ,  ${}^{*}\rho < 0.05$ ,  ${}^{**}\rho < 0.01$ ,  ${}^{***}\rho < 0.001$ .

possibility that entrepreneur reputation serves as a leeway for environmental proactiveness in emerging economies. The implications will be provided in the discussion section.

Model 4, which tests Hypothesis 3, predicts that resource abundance will negatively moderate the relationship between family influence and proactive environmental investments. The results indicate that the interaction term is positive and significant ( $\beta = 0.006$ , p = 0.043), thus offering support for Hypothesis 3. Specifically, every unit increase of organizational resources would make the

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firm increase the probability of conducting proactive investments by about 0.6 percentage after allowing for the family influence, or about 27,183 RMB increase of organizational resources would multiply the odds of being environmentally proactive caused by family influence by 1.006. In other words, such moderating effect will be more likely to occur when resource abundance is at a high level than at a low level.

The results in Model 5 lend full support to Hypothesis 4 that regional marketization will positively moderate the negative relationship between family influence and environmental proactiveness ( $\beta = -0.003$ , p = 0.031). Specifically, every one-point increase in regional marketization will decrease the proactive environmental investments by about 0.3% after allowing for the family influence at the mean value, or it would multiply the odds of being environmentally proactive caused by family influence by 0.997. This implies that the absence of governmental intervention relaxes the forced propensity to initiate proactive environmental activities.

Model 6 serves as a preliminary robustness check including all interaction terms. The results confirmed our previous findings.

#### **Robustness Test**

We conducted several tests to ensure the robustness of our findings. [4] Alternatively, we confined our sample to those having at least 10% of family ownership. Family influence still causes a lower propensity to proactively initiate environmental investments ( $\beta = -0.005$ , p = 0.037), while resource abundance ( $\beta = 0.007$ , p = 0.028) and regional marketization ( $\beta = -0.003$ , p = 0.014) moderate the above relationship negatively and positively, respectively. [5] Given that family control can take the form of management as well (Berrone et al., 2012), we also examined whether the managerial involvement of descendants makes a difference. Although only 31 firms indicated so, we found our results remained robust even if we include this as an additional control variable; that is, family influence leads to a lower level of environmental proactiveness ( $\beta = -0.006$ , p = 0.022), while resource abundance ( $\beta = 0.006$ , p = 0.050) and regional marketization ( $\beta = -0.003$ , p = 0.017) moderate the above relationship negatively and positively, respectively.

Second, we substituted entrepreneur reputation by the entrepreneur's self-perception of social status. The survey asked the respondent to rate his/her social status as compared to others, with 1 being the highest value and 10 being the lowest, and we thus reversely coded the variable. We obtained qualitatively similar results, such that family influence leads to a lower level of environmental proactiveness ( $\beta = -0.005$ , p = 0.029), while resource abundance ( $\beta = 0.007$ , p = 0.026) and regional marketization ( $\beta = -0.003$ , p = 0.053) moderate the above relationship negatively and positively, respectively. However, the moderating effect of SEW still remains insignificant ( $\beta = -0.001$ , p = 0.633).

Although we conducted the VIF test and mean-centered the variables before generating the interaction term, the existence of a high correlation between resource abundance and firm size still indicates a possibility of multicollinearity issue. Alternatively, we applied the standardized values of the two variables, in which the correlation between them becomes insignificant (p = 0.650), in the regression. We found that the moderating effect of resource abundance remained robust ( $\beta = 0.184$ , p = 0.033), further corroborating multicollinearity did not disturb the results.

Fourth, we tried different operationalizations to measure environmental proactiveness. We further conducted a principal component factor analysis of the present measurement in tandem with one additional variable that equals 1 if the focal FF receives no environmental complaint from the local residents. Though indirectly, this new variable may reflect some aspects of FFs' environmental proactiveness. The eigenvalue of 1.18 for one factor and the smallest factor loading of 0.77 indicate the validity of our measurement. Consistently, family influence is negatively associated with environmental proactiveness ( $\beta = -0.003$ , p = 0.005), while resource abundance ( $\beta = 0.004$ , p = 0.043) and regional marketization ( $\beta = -0.001$ , p = 0.016) moderate the above relationship negatively and positively, respectively. However, the moderating effect of SEW remained insignificant ( $\beta = 0.003$ , p = 0.253).

In addition, we also used philanthropic donation as a substitute for proactiveness in environmental investment, given that they both belong to the umbrella of CSR. Since donation is certainly away from unexpected governmental sanctions (Wang & Qian, 2011), it may interact with market liberalization in a distinctive way, whereas similar results on other effects should be produced if our theorization holds. Therefore, we adopted the natural logarithm of organizational philanthropic donations as the alternative dependent variable. As predicted, family influence consistently leads to fewer philanthropic donations ( $\beta = -0.006$ , p = 0.002) and resource abundance alleviates such reluctance ( $\beta = 0.009$ , p = 0.003). Moreover, the moderating effect of regional marketization turned out to be different as it now negatively moderates the baseline relationship ( $\beta = 0.001$ , p = 0.129). This is simply because the improved institutional environment may indicate greater benefits from philanthropy as donations are generally favored by the government (Marquis & Qian 2013). [6]

Finally, we checked whether the endogeneity issue might disturb our findings. Following prior lead (Yiu, Xu, & Wan, 2014b), we used the amount of debt borrowed from the commercial bank as an instrument, given that China has tight control over the debt market and SOEs tend to get favorable conditions (Qian et al., 2018). This means that a large amount of borrowing may indicate a lower level of family control, yet commercial debt may not necessarily predict the proactiveness in environmental protection since FFs can use debt to do other things. We used this instrument in the first stage to predict the independent variable and obtained the inverse Mills ratio. We found our results remained robust with the inclusion of inverse Mills ratio and its coefficient is insignificant (p = 0.784), indicating that endogeneity is not a big concern in our analyses.

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#### **DISCUSSION**

This study has applied the mixed gamble perspective to investigate how SEW and financial status perspectives are taken by FFs when they decide on their proactiveness in environmental investments. Using small- to medium-sized Chinese FFs, we have confirmed that increased family influence will make the focal firm restrain from environmental proactiveness. We have also found that increased resource abundance will help FFs to alter their reluctance to be more proactive, but regional marketization will strengthen such reluctance.

Intriguingly, however, entrepreneurial reputation does not significantly change the conservative attitudes of Chinese FFs. Reputation is, by far, the most frequently adopted reflection of SEW (Chua et al., 2015; Gómez-Mejía et al., 2007). Many optimistic views have portrayed a consideration of reputation that prompts FFs to be environmentally friendly (e.g., Berrone et al., 2010). Speaking of the context particularly, studies have proposed that Chinese entrepreneurs obtaining those reputations are altruistically donating more (Yang & Tang, 2020). Yet, we have found contradictory results. We suspect that the obtained reputation may still contain some reservation of goodwill to buffer from criticism and scrutinization over their decoupling from being environmentally proactive, thus making the hypothesized effect insignificant. In other words, we find preliminary evidence that social ties embedded in those reputations may allow family entrepreneurs to deviate from proactive environmental investments.

Another novel finding is that Chinese FFs have a special orientation toward financial goals when compared to nonfinancial ones. The mixed gamble framework should help predict a balanced trade-off, yet we have found that those FFs are quite prudent financially. Greater family influence would transform into proactive environmental investment only when given resource abundance and less regional liberalization. In alignment with the strategic CSR perspective (i.e., McWilliams & Siegel, 2001; Wang & Qian, 2011), we have corroborated that FFs are engaged in proactive environmental investments mainly for utility purposes. Therefore, we find that both the above findings and stability of the mixed gamble would be bounded by institutional differences.

This study should enrich our understanding of the social sphere of FFs in emerging economies as well. First, we have integrated the prior fragmented studies of FB ethics. Specifically, we have joined with Dou et al. (2019) to work out the dearth of 'within variations' among FFs in explaining environmental performances. We have directly examined how family influence characterized by family ownership would predict FFs' environmental proactiveness, and such nuanced investigation responds to the calls for FB studies that go beyond the impasse of simple categorical comparison (Daspit et al., 2018; Nason et al., 2019).

We have also complemented previous institutional arguments in that firms pursue philanthropic donations in order to obtain legitimacy and favorability from the government (e.g., Ge & Micelotta, 2019; Marquis & Qian, 2013). Empirically,

we have intriguingly revealed that Chinese FFs tend to be more financially prudent, especially with respect to environmental investments even when their regional markets are liberalized (cf., Cruz et al., 2014). This suggests that the proactiveness in environmental investments can be taken as insurance to safeguard unexpected governmental appropriation, the situation pinpointing that the institutional conditions are subject to both organizational and managerial cognitive interpretations.

We have also deviated from the work (unilateral theorization) of Dou et al. (2019) by jointly considering a dynamic trade-off between the socioemotional and financial considerations, which echoes with the recent theoretical proposition in the mixed gamble framework. We deem this theorization (more) reasonable, given that family principals are certainly rational as they need to make a balance between the two to make their firms sustainable. Therefore, we suggest that the unilateral reliance on SEW may sketch an incomplete picture either. We challenge the corollary that family ownership leads to long-term orientation and then to better environmental behavior and ethics. Instead, the long-term orientation also needs to be weighed against the contemporary financial status of a firm to predict the final decision on environmental management. Therefore, future FB ethics studies should take account of both internal and external influences simultaneously.

Second, our identification of the peculiarities of Chinese FFs has shed new light on the mixed gamble framework as well. We challenge the applicability of the SEW perspective at least for China, particularly on the environmental management domain. We find that greater family influence actually suggests a lower propensity for environmental proactiveness. This, in effect, resonates with the parsimony characteristics proposed by prior FB scholars (i.e., Carney, 2005) in that FFs tend to be prudent in managing their resources. Our moderator of resource abundance further proves this corollary that they will be proactive only when they have a large quantity of resource repository to make trials, similar to their roles in philanthropic donations (Wang & Qian, 2011). We thus bring up a caveat that the previous debate on the relationship between family influence and environmental proactiveness might be a matter of the institutional setting contextualized in previous studies.

We are also mindful of the mixed gamble framework which can be slightly different under different institutional milieus. The contextualization of CSR-related issues in China both directly responds to the calls for, and brings in, new ingredients to the mixed gamble framework. We are convinced that institutionalized values are indeed a factor to regulate FFs' organizational decisions in environmental investments (Berrone et al., 2010) when they are responsive to external stakeholders (Cruz et al., 2014). However, China lacks the general norms of prioritizing CSR like philanthropy or environmental protection (Du, 2015), and thus, FFs are not so proactive as what their counterparts do in developed countries (cf., Berrone et al., 2010). We thus encourage further empirical investigation into the applicability of the mixed gamble framework in different settings (Gómez-Mejía et al., 2018).

Third, we have brought new insights into FB research and institutional theory as well. Despite the trade-offs between SEW and financial status still hold, Chinese

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FFs lean more (heavily) toward the financial perspective rather than toward the SEW one. This cautions that institutional contingencies should be treated as superior factors that set reference points for the evaluation of gains and losses in mixed gambles. Although governmental voices and influences seem to be a strong catalyst of institutional changes, we encourage a further examination into the dynamics of how governments trigger normative changes in environmental proactiveness and other CSR behaviors. One interesting phenomenon to look at is the recent so-called *strictest environmental campaign* in China and whether the mandates will give birth to societal changes and how.

Fourth, this study has changed the emphasis from public-listed firms to private-owned FFs, responding directly to calls for the necessity to conduct an in-depth analysis of CSR-related issues for smaller FFs (Cruz et al., 2014). The results from Chinese private-owned FFs as in our sampled FFs confirm the inferences that idiosyncrasies in decisions do exist between large and small FFs (Fang, Randolph, Memili, & Chrisman, 2016). Therefore, we believe the distinctiveness and ramification of our sampled firms may provoke inconsistencies in CSR genre for family studies. In other words, any conclusion to be made should specify a suitable context, and subsequent reviews and meta-studies need to address the sampling differences.

## **Limitations and Future Research Directions**

The limitations of the study may open new windows for future research. First, the cross-sectional sample cannot offer a causal mechanism; thus, we encourage future replication studies to use a longitudinal dataset if available. The advantage of using a longitudinal dataset can also help depict the nuanced dynamics of reference points for mixed gambles in various aspects of decisions. Moreover, it is fruitful to explore further industry heterogeneities and other potential contingencies to depict a comprehensive picture of the theoretical relationship.

Second, cultural aspects need to be emphasized in tandem with marketization differences. An interesting avenue is to examine how beliefs juxtapose with financial considerations would result in different CSR behaviors and decisions.

Third, because SEW is a multi-dimensional construct, the confidence to claim the importance of financial concern over SEW consideration for Chinese FFs can be found if other measurements (e.g., alternative of generations) can also provide similar results. Finally, we need to take exact measurements of the proactiveness for environmental investments and governmental appropriations if given the chance.

#### CONCLUSION

This study has enriched our understanding of the environmental proactiveness of FFs, especially from a mixed gamble perspective. The findings agree with the views of the negative camp that greater family influence leads to a lower level of

environmental proactiveness for FFs in China, highlighting diametrical institutional differences. Altogether, an important message is that any theoretical or practical justification needs to consider a two-sided trade-off against the specific institutional background. We encourage more future investigation into the peculiarities of FFs along both social and economic dimensions in different institutional settings.

#### **NOTES**

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- [1] We conducted several robustness tests by substituting alternative measurements of this dependent variable as shown later.
- [2] Moreover, we have examined whether the family's dominance on the operational position matters. We have applied an indirect question that asks whether operational decisions are made by professional managers (i.e., non-family members). As expected, there are only 24 firms in our sample, indicating that the operational decisions are made by professional managers. We have corroborated that our results are qualitatively similar even when we exclude those 24 firms.
- [3] Logistic command by default reports the odds ratio instead, but even using this alternative specification does not change our findings for all the following models.
- [4] Due to space limitations, the regression table can be obtained upon request.
- [5] We have further examined the results when setting the standards at 33% (security control level) and 51% (absolute control level) and found similar results. As suggested, we have also explored the effects of family influence by including sampled firms with zero family influence and those below 5% (i.e., non-FFs), enlarging the sample size to 2,536 firms. We found that the hypothesized effects remain qualitatively similar, yet there is no significant difference (p = 0.208) between those firms with zero family influence and those do when we applied the regressor that treats firms with zero family influence as 0 and others as 1.
- [6] We have later applied comparative performance aspiration to check if the results have remained robust. Though indirectly, we have utilized one question that asks whether the respondent feels the performance of the focal FF is better than the competitor (1), the same (2), or worse (3), and we have found persistent results

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from China's National Economic Research Institute and the All-China Industry and Commerce Federation. Restrictions apply to the availability of these data, which were used under license for this study. Data are available in the Open Science Framework at osf.io/46dqt with the permission of the two institutes.

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