

Risk-Taking Behaviours of Ex-Military Executives and Family Firms in Domestic and Overseas Decisions

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INTRODUCTION

The key concept of prospect theory is loss aversion (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992). Based on prospect theory, prior studies largely emphasised that loss aversion in relation to financial wealth, such as compensation, salary, and options, plays a significant role in predicting the risk-taking behaviours of executives. For instance, executives tend to take greater risks when firm performance falls below aspirations and threatens their compensation, but they exhibit risk-averse behaviours when firm performance exceeds aspirations and they have anticipated compensation (Holmes *et al.*, 2011; Mount and Baer, 2022).

Although financial wealth is able to explain much of the risk-taking behaviours exhibited by executives, it remains challenging to account for the effects of other characteristics such as advocating honour, altruism, and heroism on their risky decisions (Daboub *et al.*, 1995; Schulze, Lubatkin and Dino, 2003b; Gomez-Mejia *et al.*, 2021). A few scholars have started to examine the importance of intangible wealth in risk-taking behaviours, such as firm control, survival, and reputation, focusing on family firms (Gómez-Mejía *et al.*, 2007; Fang *et al.*, 2021). However, there is still a limited understanding of how intangible wealth affects risk-taking behaviours among executives.

To extend the line of research, this study examines one interesting yet underexplored dimension of executives' characteristics: military service experience. Military service provides a unique experience for executives, since the military advocates honour and values reputation (Guo *et al.*, 2020). While ex-military executives tend to put a greater value on intangible wealth such as personal reputation and satisfaction from promotion (Hiatt, Carlos and Sine, 2018; Guo *et al.*, 2020), compared to other executives, who generally prioritize personal financial wealth (Jensen and Meckling, 1976; Nyberg *et al.*, 2010), we have a limited understanding of how their intangible wealth affects the ex-military executives' risk-taking behaviours.

The majority of existing literature points to ex-military executives being more likely to exhibit conservative and cautious risk-taking behaviours due to their concern that high-risk behaviours may have negative impacts on their reputation (Benmelech & Frydman, 2015; Guo *et al.*, 2020; Koch-Bayram & Wernicke, 2018; Luo *et al.*, 2017). For example, ex-military executives exhibit risk aversion in financial disclosure (Koch-Bayram and Wernicke, 2018), tend to be cautious in ethical risks (Luo, Xiang and Zhu, 2017), and take fewer risks in firm diversity (Benmelech and Frydman, 2015; Guo *et al.*, 2020). This line of research implicitly assumes that ex-military executives exhibit risk aversion in order to protect intangible wealth. It raises a question as to the difficulty of explaining high-risk behaviours by ex-military executives. Based on prospect theory, we emphasize that ex-military executives demonstrate loss aversion for intangible wealth instead of risk aversion.

Based on the Chinese dataset over 12 years, we examine how intangible wealth plays a vital role in the risk-taking behaviours of ex-military executives in two strategic investment decisions: domestic innovation and overseas expansion. We propose that ex-military executives are willing to accept higher levels of risk when considering the potential loss of intangible wealth resulting from risky decisions. However, when they perceive that risky decisions do not generate new intangible wealth and may harm their existing intangible wealth, they may refuse to take risks. The distinction depends on how the problem is framed

(Kahneman and Tversky, 1979; Tversky and Kahneman, 1992; Holmes *et al.*, 2011). Specifically, since veterans' military service tends to give them more in-depth knowledge, experience, and resources in the domestic market compared to the foreign market (Simpson and Sariol, 2019), we found that ex-military executives are more likely to take risks in domestic innovation decisions, while being more hesitant to take on additional risk in overseas expansion.

In addition, we examine the risk-taking behaviours of ex-military executives in family firms. A decision may exacerbate the loss of intangible wealth for one stakeholder (e.g., family firm owners) while attenuating the loss for another (e.g., ex-military executives) (Gomez-Mejia *et al.*, 2021). However, there is limited understanding of how the risk-taking behaviours of executives are affected in this situation. Family firms provide a suitable environment to examine it because family firms also greatly value intangible wealth (Gómez-Mejía *et al.*, 2007; Strike *et al.*, 2015) and are in a strong position to monitor their executives (Block, 2012; Gomez-Mejia, Neacsu and Martin, 2019). To protect the intangible wealth of family firm owners, such as family control over the firm, family reputation, and firm survival, the ex-military executives' risk-taking behaviours are adjusted in family firms in two strategic types of investment decisions (risk seeking and risk aversion).

This research contributes to the literature in three ways. First, we extend prospect theory by considering the importance of intangible wealth in the risk-taking behaviours of executives. Drawing on prospect theory, existing research has primarily focused on how executives adjust their risk-taking behaviours, due to aversion to loss of financial wealth, such as salary, stocks, options, and compensation (Matta and McGuire, 2008; Holmes *et al.*, 2011; Mount and Baer, 2022). We have found that ex-military executives incorporate the reputation and promotion opportunities expected from domestic innovation into their present endowment. Due to their aversion to loss of endowment, they are willing to undertake higher risks. However, they reject risks in overseas expansion because of their desire to protect their existing intangible wealth. We emphasise the importance of intangible wealth in shaping executives' risk-taking behaviours.

Second, we offer a better understanding of the risk-taking behaviours of ex-military executives by examining risky decisions in domestic and overseas environments. While previous studies have suggested that ex-military executives are more likely to exhibit conservative and cautious risk-taking behaviours (Guo, Zan, Sun, & Zhang, 2020; Koch-Bayram & Wernicke, 2018; Luo, Xiang, & Zhu, 2017), we extend the literature by examining the different risk preferences in domestic innovation and overseas expansion. We highlight that the risk preferences of ex-military executives are not constant. We found that ex-military executives are not risk-averse, but rather adjust their risk-taking behaviours to protect their honour from loss.

Third, we also contribute to family firm literature by extending the boundary of why family firm owners would like to influence the risk-taking behaviours of their executives. Existing literature mainly focuses on the conflicts between executives' financial wealth and the socioemotional wealth of family firm owners, such as the socioemotional wealth may be threatened by the executives' option wealth (Gomez-Mejia, Neacsu and Martin, 2019) and stock ownership (Berrone *et al.*, 2010). We extend the boundary by examining how ex-military executives significantly change risk-taking behaviours in family firms. We found that

the conflict between the intangible wealth goals of the executives and those of the family firm owners may lead the latter to exert efforts to affect the risk preferences of the executives.

THEORETICAL FRAMEWORK

Prospect Theory in Risk-Taking Behaviours

Prospect theory is widely examined to explain the risk-taking behaviours of executives. It emphasises that decision-makers are primarily loss-averse (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992; Pepper and Gore, 2015). Specifically, with a focus on a set of well-defined risky choices, prospect theory provides predictions that decision-makers are likely to be risk-seeking in the face of potential loss, but risk-averse when dealing with potential gains (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992; Holmes *et al.*, 2011). Problem framing determines whether decision-makers view a risky decision as a potential gain or a potential loss (Tversky and Kahneman, 1989, 1992). Endowment plays a crucial role in shaping problem framing (Kahneman and Tversky, 1979; Chrisman and Patel, 2012).

More recently, scholars have suggested that endowment appraisal may also include current and future intangible wealth, such as reputation and promotion (Gómez-Mejía *et al.*, 2007; Gomez-Mejia, Patel and Zellweger, 2018; Fang *et al.*, 2021). Notably, cognitive frame plays a critical role in shaping subjective evaluation by influencing the way decision makers perceive and interpret information and experience (Werner & Cornelissen, 2014). Educational, functional, career experience, and other backgrounds shape the decision-makers' fundamental values and personalities, which affect their appraisal of cognitive frame and intangible wealth (Hambrick and Mason, 1984; Gomez-Mejia *et al.*, 2021). Therefore, risk-taking behaviours of decision-makers are affected by their backgrounds due to their different appraisal of intangible wealth based on their given cognitive frame.

Ex-military Executives

Military service is an important experience that affects individual personalities and instils values such as honour, selflessness, and integrity (Franke, 2001; Hiatt, Carlos and Sine, 2018). Therefore, intangible wealth is critical for ex-military executives. Among intangible wealth, reputation and promotion are most critical for ex-military executives, because honour is the core value of soldiers (Guo *et al.*, 2020). They expect to gain honour from obtaining a higher position and high praise from internal and external stakeholders (Daboub *et al.*, 1995; Guo *et al.*, 2020). Building on this, we propose that the risk-taking behaviours of ex-military executives are mainly driven by intangible endowment loss aversion.

Ex-military executives acquire ample domestic knowledge, experience, and resource from their military service (Simpson and Sariol, 2019). However, they usually have limited opportunities to accumulate overseas knowledge, experience, and resource because of their special identities. These formulate the cognitive frame of ex-military executives (Werner and Cornelissen, 2014; Gomez-Mejia *et al.*, 2021), who have more confidence in domestic environments compared to overseas. Specifically, ex-military executives incorporate expected intangible wealth into present endowment from domestic risky decisions. They accept higher levels of risk in domestic contexts to prevent the loss of the endowment. Conversely, in overseas environments, they cautiously calculate future intangible wealth into present

endowment because they do not have certainty about the risky situations. Thus, they value their existing intangible wealth and resist the possibility of its loss, leading to a lower willingness to take risks.

Ex-military Executives in Family Firms

Since the risky decision-making process of executives is significantly affected by stakeholders (Berrone *et al.*, 2010; Connelly *et al.*, 2020), we further examine the risk-taking behaviours of ex-military executives in family firms. Family firm owners have a strong will to influence the risk-taking behaviours of executives because they face higher risk and greater vulnerability to loss as a result of executives' excessive risk preferences (risk aversion or risk seeking) (Gomez-Mejia, Neacsu and Martin, 2019). The reasons for this are as follows.

Initially, family firm owners' wealth is often concentrated in one organisation (Anderson and Reeb, 2003). At the same time, the fate of a family is usually tied to a single firm (Anderson and Reeb, 2003). Threats to the family firm may imply catastrophic losses for family firm owners (Gómez-Mejía *et al.*, 2007; Gomez-Mejia, Neacsu and Martin, 2019). This is also why socioemotional wealth centred around the control of the firm by the family, the survival of the family firm, and the reputation of the family are so critical to the owners of family firms (Gómez-Mejía *et al.*, 2007; Berrone, Cruz and Gomez-Mejia, 2012).

On the other hand, family firm owners have the ability to influence the risk-taking behaviours of executives. Existing research shows that family firm owners are in a powerful position, which allows them to become effective monitors (Berrone *et al.*, 2010; Block, 2012). Based on their informational advantage, they will employ various means to affect the risk-taking behaviours of executives in order to protect the interests of the family. For example, families may affect the risk-taking behaviours of executives through favourable performance assessments, more stock awards, and lower employment risk (Berrone *et al.*, 2010).

Thus, family firm owners monitor their executives closely to ensure their actions do not harm their socioemotional wealth. With ex-military executives showing different risk-taking behaviours in domestic innovation and overseas expansion, these actions may harm the socioemotional wealth of family firm owners. Thus, we predict that family firm owners constrain the following risk-taking behaviours of ex-military executives: excessive risk aversion in domestic innovation and excessive risk seeking in overseas expansion.

In the following section, we examine how ex-military executives make risky decisions in the two sets of risk-taking behaviours: domestic innovation decisions and overseas expansion decisions. Further, we explain how family involvement affects the risk-taking behaviours of ex-military executives in the domestic and overseas markets (see Figure 1).

[Insert Figure 1 about here]

HYPOTHESES DEVELOPMENT

Ex-military Executives and Domestic Innovation Decisions

Although domestic innovation is inherently risky and uncertain, and consumes substantial resources and efforts (Eisenhardt and Martin, 2000; Svensson, 2007; Crossan and Apaydin, 2010; Rosenbusch, Brinckmann and Bausch, 2011), it is critical for boosting local economic growth, improving social welfare (Jiang *et al.*, 2020), and a firm's long-term competitive

advantages (Ahuja, Lampert and Tandon, 2008; Chen *et al.*, 2022). Successful domestic innovation leads ex-military executives to establish good social reputations and achieve a better position with their present firm or future employer, which is core intangible wealth for ex-military executives (March and Shapira, 1987; Konadu *et al.*, 2020).

The military accounts for most of the advancement of knowledge in the high-tech industry (Avrahami and Lerner, 2003). Ex-military executives have accumulated innovative knowledge, skills, and greater awareness of innovation during their military service (Avrahami and Lerner, 2003). At the same time, they are capable of accessing external resources and information for innovation from the veteran network (Daboub *et al.*, 1995; Hiatt, Carlos and Sine, 2018). For example, a large population of officials and CEOs with a military background have established and joined social clubs and associations where veterans are able to share information, access resources and help each other (Avrahami and Lerner, 2003; Hiatt, Carlos and Sine, 2018).

As a result of their military background, ex-military executives value intangible wealth and are confident in their ability to gain it from future innovative successes in the domestic market (Wiseman and Gomez-Mejia, 1998; Gomez-Mejia *et al.*, 2021). These executives are concerned that failing to continue domestic innovative activities will damage the intangible endowment they have appraised. To prevent the loss of intangible endowment (Holmes *et al.*, 2011; Gomez-Mejia *et al.*, 2021), they make more decisions involving domestic innovation, even if this means taking higher risks. Our first hypothesis follows from the preceding arguments:

Hypothesis 1: Military executives have a positive impact on domestic innovation decisions.

Ex-military Executives and Overseas Expansion Decisions

Ex-military executives may be promoted by successful internationalisation because it helps firms achieve economies of scale and scope, and improve efficiency and market growth (Duran, Kostova and van Essen, 2017). However, international expansion may hinder a firm's capacity to fulfill political duties, sustain domestic employment, or contribute to the local economy (Lebedev, Sun, Markóczy, & Peng, 2021; Luo, Wang, & Zhang, 2017). Further overseas expansion decisions may not be a good signal for the reputation of executives in local society, such as local government, employees, and residents.

It is worth noting that international experience is critical for executives to make risky decisions in overseas expansion (Sambharya, 1996; Hoskisson *et al.*, 2017). However, ex-military executives have limited opportunities to accumulate international experience because of their classified backgrounds. For example, the American president issued Presidential Proclamation 10043 to deny entry to America for any Chinese students with connections to the Chinese military (Stuart, 2021). Additionally, institutional pressures from host countries, such as competition regulations, and national security evaluations, may impede a firm's overseas expansion due to their executives' military backgrounds (Meyer *et al.*, 2014; Lebedev *et al.*, 2021). The network, resource, security, and information acquired by firms through ex-military executives are mainly concentrated in the domestic market. This makes it difficult to utilise some of the advantages of these executives in firms' overseas expansion.

To sum up, ex-military executives have low expectations of gaining more reputation and

better positions from a firm's overseas expansion, and they do not incorporate this intangible wealth into the current endowment (March and Shapira, 1987; Holmes *et al.*, 2011). They are satisfied with what they have already achieved from the existing internationalization and tend to protect their current endowment. Their consideration of risk exceeds their concern for endowment in whether to undertake more overseas expansion. Thus, we have our second hypothesis:

Hypothesis 2: *Military executives have a negative impact on overseas expansion decisions.*

The Risk-Taking Behaviours of Ex-Military Executives in Family Firms

Family firm owners are highly vigilant about the excessive risk-taking behaviours of executives due to the decisions may have a negative impact on their socioemotional wealth (Berrone *et al.*, 2010; Gomez-Mejia, Neacsu and Martin, 2019). A particular risky decision may worsen the loss of intangible wealth for family firm owners, while mitigating the loss for ex-military executives (Gomez-Mejia *et al.*, 2021). In our research, ex-military executives' risk seeking in domestic innovation decisions and risk aversion in overseas expansion decisions may threaten the socioemotional wealth of family firm owners, leading them to influence ex-military executives to adjust their risk-taking behaviours. To better illustrate the changes in the intangible wealth of the decision-makers involved in our hypothesis, we have depicted Figure 2.

Domestic innovation decisions. Ex-military executives show risk seeking in domestic innovation decisions. However, this may harm the socioemotional wealth of family firm owners, especially in relation to the control of the firm by the family. Specifically, while knowledge and talents are critical to domestic innovation success because of knowledge and effective knowledge utilization being fundamental to innovation (Chen and Huang, 2010; Sung and Choi, 2018), the ability of family members to provide such resources is limited. To overcome these constraints, they have to hire more non-family employees with technical skills, knowledge, and experience (Chrisman and Patel, 2012; Duran *et al.*, 2016). However, an increase in new non-family personnel may dilute family influence and weaken their control over the firm (Gomez-Mejia, Makri and Kintana, 2010; Chrisman and Patel, 2012).

Additionally, innovation requires a significant amount of financial resources (Lee and O'Neill, 2003; Crossan and Apaydin, 2010). Since family business owners do not wish to lose control of the firm by publishing new stock and introducing new outside shareholders, they rather choose to use internal cash flows or debt financing for innovation (Sirmon and Hitt, 2003; Chrisman and Patel, 2012). However, greater debt levels raise the risk of financial difficulty and loss of family control (Schulze, Lubatkin and Dino, 2003a; Gomez-Mejia, Makri and Kintana, 2010). Given the ex-military executives' risk seeking in domestic innovation decisions, family firm owners will use various methods to influence the risk-taking behaviours of ex-military executives in order to protect their socioemotional wealth. Thus, we propose:

Hypothesis 3a: *Family involvement in a firm will negatively moderate the relationship between ex-military executives and domestic innovation decisions.*

Overseas expansion decisions. Ex-military executives tend to exhibit risk aversion when making decisions about overseas innovation. However, this attitude may have negative

consequences for the socioemotional wealth of family firm owners, particularly in terms of the survival of the family firm and the family's reputation. Although overseas expansion increases the liability of foreignness and coordination costs (Zaheer, 1995; Li, 2005), it helps firms mitigate exposure to survival risk by spreading revenue across different countries. A systematic risk related to the domestic economy can be greatly reduced with further overseas expansion (Gomez-Mejia, Makri and Kintana, 2010).

Moreover, given the close link between the family name and the firm, family business owners often endeavour to expand the visibility and prestige of the family name globally through overseas expansion of the firm (Dyer and Whetten, 2006; Chrisman and Patel, 2012). This expansion may also allow family firm owners to build a cross-border business empire, enhancing their family reputation and reducing their survival risk. For instance, the Chinese family retail firm Sunning acquired F.C. Internazionale Milano in 2016 to extend their family's visibility, reduce their survival risk and achieve a higher global family reputation (Lee *et al.*, 2012; Cheung *et al.*, 2015). To prevent the loss of this socioemotional wealth, families may exert significant pressure on ex-military executives to adopt a more positive attitude towards overseas expansion decisions. Based on these considerations, we propose the following hypothesis:

Hypothesis 3b. *Family involvement in a firm will positively moderate the relationship between military executives and overseas expansion decisions.*

METHODOLOGY

Research Setting

We choose China as our research context because China provides an appropriate setting to examine our hypotheses in several ways. First, there are a great number of military veterans in China, and they play significant roles in firm operations in domestic and foreign markets. According to the Ministry of Human Resources and Social Security, 28,800 ex-soldier ventures were established in 2016 and 35,000 in 2017 (MHRSS, 2018). For instance, some Chinese ex-military executives show good leadership globally, such as Ren in Huawei and Wang in Wanda (Guo *et al.*, 2020).

Second, Chinese firms have remarkably increased their domestic innovation and international operations in recent years (Kotabe, Jiang and Murray, 2017; Wu and Ang, 2020). This provides a good context to examine how the risk-taking behaviours of ex-military executives affect a firm's domestic innovation and overseas expansion decisions.

Third, family firms value non-financial wealth, such as maintaining family control, family reputation, dynastic succession and survival (Gómez-Mejía *et al.*, 2007; Gomez-Mejia, Neacsu and Martin, 2019). As Chinese culture places a high priority on reputation and prosociality (Li and Liang, 2015), Chinese family firms provide a representative case to assess how non-financial wealth affects risky decisions. Taken together, China is an ideal context to examine our hypotheses.

Data Collection

Our dataset was collected from several data sources, including the China National Intellectual Property Administration (CNIPA), the China Stock Market and Accounting Research (CSMAR), corporate annual reports, and corporate websites (Zhang, Marquis and Qiao, 2016;

Zhou, Gao and Zhao, 2017; Wang, Farag and Ahmad, 2021). We have focused on the listed firms as our research context. This is because it is difficult to collect credible data on small, medium or unlisted firms in China, while large Chinese firms tend to invest in both innovation and internationalization (Choi, Lee and Williams, 2011).

According to the annual reports, we have collected military experience data (Luo, Xiang and Zhu, 2017; Guo *et al.*, 2020). For innovation information, we cross-reference the data in CSMAR with CNIPA to substantiate that the data is consistent and accurate. In the event of a difference between CSMAR and CNIPA, we used the data from CNIPA for consistency (Wang *et al.*, 2021). Financial data is collected from CSMAR, corporate annual reports, and corporate websites.

To examine two strategic decisions as dependent variables, we collected two datasets. We identified the first data contains firms' domestic innovation decisions data and other related data. The second data consists of firms' overseas expansion decisions data and other related data. Our initial sample includes all Chinese listed firms on both the Shanghai Stock Exchange and Shenzhen Stock Exchange from 2006 to 2017. After excluding special treatment firms and firms with missing data (Zhang, Marquis and Qiao, 2016; Wang, Farag and Ahmad, 2021), the final domestic innovation decisions sample consists of 2,923 firms and 16,764 firm-year observations, and the overseas expansion decisions dataset consists of 1,510 firms and 7,491 firm-year observations.

Measurement

Dependent variables

Domestic innovation decisions. Previous research widely utilised patents to measure innovation because patents reflect firm innovation more accurately and demonstrate a wider range of innovation-related efforts compared to other measures of innovation (Chen *et al.*, 2015; Piperopoulos, Wu and Wang, 2018). Patents in China have been categorized into invention, utility, and design patents. An invention patent refers to a completely new technical solution for a product or process or a significant improvement to an existing product or process (Zhou, Gao and Zhao, 2017; Jiang *et al.*, 2020). In this study, we used the number of invention patent applications in China as the measure of Chinese firms' domestic innovation decisions.

Overseas expansion decisions. To accurately evaluate overseas expansion decisions, we observed the variation in firm internationalization. Foreign sales divided by total sales have been widely utilised to measure firm internationalization (Gomez-Mejia, Makri and Kintana, 2010; Ma, Ding and Yuan, 2016). The overseas expansion decision is measured by the firm's internationalization growth ratio:

Overseas expansion decisions

$$= \frac{\text{Firm internationalization}_t - \text{Firm internationalization}_{t-1}}{\text{Firm internationalization}_{t-1}}$$

Independent variable

Ex-military Executives. We manually collected the military experience of each executive of all the sample firms from the biographical sketches. If the executive has served in the military, he/she is considered as an ex-military executive (Luo, Xiang and Zhu, 2017; Koch-Bayram

and Wernicke, 2018). We measure the independent variable as the proportion of the executives with a military background in the total executive team, including directors, supervisors and top managers, because Chinese firms have a culture of high collectivism and directors, supervisors and top managers all affect the decision process (Chen, Liu and Tjosvold, 2005). Additionally, we conducted a robust examination by measuring the independent variable as the proportion of ex-military executives in the top management team.

Moderator

Family firm. Family firms are defined by the involvement of a family in a business and a vision for the way the enterprise will benefit the family (Chua, Chrisman and Sharma, 1999). Following previous research, we use a binary measure of family firms (Chrisman and Patel, 2012; Duran *et al.*, 2016; Fang *et al.*, 2021). The binary variable distinguishes family firms (=1) from non-family firms (=0). Specifically, we code this variable as 1 when family members are controlling shareholders of the firm and family members are or have been top managers, or directors (Xu *et al.*, 2015; Fang *et al.*, 2021). A firm that does not match the criteria is not considered a family business and is coded as 0.

Control variables

Based on previous research (Choi *et al.*, 2011; Li, Xia, & Zajac, 2018; Luo *et al.*, 2017; Saeed *et al.*, 2022; Wu & Ang, 2020; Zhang *et al.*, 2016), we constructed a vector of control variables because of their potential influence on corporate behaviours, which includes political executives, political-military executives, salary of CEOs (defined as the natural logarithm of [total salary + 1]), subsidies (total subsidies divided by total sales), high-tech industry (dummy variable), intangible asset (defined as the natural logarithm of [intangible asset+ 1]), leverage, firm performance (ROA), firm age (defined as the natural logarithm of [listing years + 1]), firm size (defined as the natural logarithm of the total asset), financial slack (current ratio), industry competitors (number of competitors in same industry).

Model Estimation

For the domestic innovation decisions, we use a negative binomial regression model because it is the count-based dependent variable (Mellahi and Wilkinson, 2010; Piperopoulos, Wu and Wang, 2018). We perform two-way fixed-effects models based on the Hausman test to adjust for variations between entities and times (Hausman, 1978; Lu *et al.*, 2022). For the overseas expansion decisions, we use a two-way panel fixed-effect regression with cluster-robust standard errors to examine our hypotheses (Malen and Vaaler, 2017; Shirodkar *et al.*, 2022). Additionally, for both datasets, we lag all independent and control variables by one year to reduce the possibility of endogeneity. (Sun, Hu and Hillman, 2016; Tojeiro-Rivero and Moreno, 2019).

RESULTS

Descriptive statistics and correlations of two datasets are reported in Tables 1. In addition, we checked for the possibility of multicollinearity by examining the variance inflation factor (VIF) for each variable. Generally, the value of VIF exceeding the cutoff point of 10 indicates that the results suffer from multicollinearity (Hair *et al.*, 1998). The VIFs for all variables in

domestic innovation decisions dataset are less than 2.02, and the average is 1.50 in our model, indicating a low possibility of multicollinearity. The highest VIF in overseas expansion decisions dataset is 2.75, and the average VIF is 1.62, also showing a low possibility of multicollinearity.

[Insert Table 1 about here]

To examine the two hypotheses in a domestic strategic decision, we conduct a two-way fixed-effects negative binomial regression model in domestic innovation decisions dataset. The results are provided in Table 2. The results in Model 1 introduce the control variables. Model 2 introduces the main variable in addition to the control variables. Hypothesis 1 predicts that ex-military executives will have higher domestic innovation decisions. Model 2 in Table 2 demonstrates that ex-military executives ($\beta=0.922$, $p<0.05$) are significantly and positively related to domestic innovation decisions. Hence Hypothesis 1 is supported.

To examine the moderating effects of the family firm, we add the interaction terms between ex-military executives and family firm. Models 3 in Table 2 shows the interaction effects and tests Hypothesis 3a. Ex-military executives in a family firm are more likely to act cautiously in the face of risky strategic decisions for domestic innovation decisions than those in other firms. Our results support Hypothesis 3a by confirming the negative effects of family firms ($\beta=-1.493$, $p<0.1$) in Model 3.

[Insert Table 2 about here]

To facilitate the interpretation of interaction effects, we utilise the procedures by Aiken and West (1991) to plot the interaction effects of family firms. Figure 2 illustrates the combined effects of ex-military executives and family firms on domestic innovation decisions. The slope of the non-family firms is steeper than that of the family firm in Figure 3. This indicates lower domestic innovation decisions of ex-military executives when they work for a family firm.

[Insert Figure 3 about here]

To examine the two hypotheses in overseas strategic decision, we use a two-way fixed-effects panel regression model in overseas expansion decisions dataset. The results are provided in Table 2. Model 4 tests the control variables. As shown in Model 5, Hypothesis 2 is supported. Model 5 in Table 2 demonstrates that ex-military executives ($\beta= -2.778$, $p<0.05$) are significantly and negatively related to overseas expansion decisions. To examine the moderating effects of family firms, we introduce the interaction terms between ex-military executives and family firms in Model 6. Our results support Hypothesis 3b by confirming the positive effect of family firms ($\beta= 6.893$, $p<0.05$)

To facilitate the interpretation of the interaction effects in Model 6, we graph the moderating effects of family firms on the relationship between ex-military executives and overseas expansion decisions. In Figure 4, the graph shows that the slope of family firms' line is positive, whereas that of non-family firms is negative. This means that a higher overseas expansion orientation is seen when ex-military executives work for family firms.

[Insert Figure 4 about here]

ROBUSTNESS TESTS

We used robustness tests to ensure the reliability of the results. First, we did not include R&D as a control variable in the main model because many firms did not disclose R&D information

and utilised different disclosure formats, which may generate biased results. At the same time, existing papers show that ex-military executives are cautious about R&D investments (Benmelech and Frydman, 2015; Guo *et al.*, 2020). Here, we added R&D as a control variable and the results show a consistent pattern with the main tests (as presented in Table 3). Second, following research based on western contexts (Talke, Salomo and Kock, 2011; Patel and Chrisman, 2014), we replaced ex-military executives by TMT with a military background. The results are shown in Table 4 and remain consistent. Because of the space limit, these results are listed in the Appendix.

DISCUSSION AND CONCLUSION

Drawing on prospect theory, this study explains how ex-military experiences affect executives' risk-taking behaviours in domestic and overseas markets. Ex-military executives are willing to take more risks in domestic innovation to gain more non-financial wealth due to their emphasis on reputation and position. In contrast, for overseas expansion, they are less likely to take greater risks due to their fear of losing non-financial wealth already gained from extant international operations. We further find that the risk-taking behaviours of ex-military executives are significantly affected by firm characteristics. Family business owners negatively affect the risky decisions of ex-military executives in domestic innovation because they are concerned that it will lead to a loss of control over the firm. On the other hand, they hope that ex-military executives continue to expand the business overseas in order to reduce the risk of the family firm's survival and establish a higher global reputation for the family. In this study, we provide a more comprehensive understanding of the effects of ex-military executives on the domestic and overseas risk-taking behaviours in family firms.

Our study contributes to the literature in three ways. First, it contributes to prospect theory by highlighting the crucial role of intangible wealth in shaping the risk-taking behaviours of executives. Based on prospect theory, prior research has primarily examined how executives adjust their risk-taking behaviours in response to the potential loss of financial wealth, such as salaries, stocks, options, and compensation (Matta and McGuire, 2008; Holmes *et al.*, 2011; Mount and Baer, 2022). Our findings demonstrate that ex-military executives show a greater propensity for risk-taking in domestic innovation, while exhibiting risk aversion when it comes to international expansion. We suggest that the aversion to loss of intangible wealth, such as reputation and position, is the primary factor underlying their distinctive risk preferences.

Second, we contribute to the growing literature on the risk-taking behaviours of ex-military executives. Based on upper-echelon theory (Koch-Bayram and Wernicke, 2018; Guo *et al.*, 2020) and institutional theory (Luo *et al.*, 2017), existing studies have suggested that ex-military executives are more likely to exhibit conservative and cautious risk-taking behaviours. Our study focuses on prospect theory to explain the different risk-taking behaviours of ex-military executives in domestic and overseas risky decisions. Our study revealed that ex-military executives exhibit a nuanced approach to risk-taking, wherein they are not inherently risk-averse but rather adjust their risk-taking behaviours in order to safeguard their honour.

Third, our study contributes to the family firm literature by expanding the scope of inquiry regarding why family firm owners seek to affect the risk-taking behaviours of

executives. Previous literature has predominantly focused on the conflicts between executives' financial wealth and the socioemotional wealth of family business owners, such as the conflict between executives' option wealth and the socioemotional wealth (Gomez-Mejia, Neacsu and Martin, 2019), or the conflict between executives' stock ownership and the socioemotional wealth (Berrone *et al.*, 2010). Our research has revealed that a conflict may arise between the intangible wealth goals of the executives and family firm owners. This conflict may prompt the family to take measures to affect the risk-taking behaviours of their executives, in order to align decision-making with the interests of the family. This finding highlights the importance of recognising the interplay between family ownership and management, as well as the potential impact of intangible wealth on risk-taking behaviours in family businesses.

Our findings provide practical implications. First, we suggest that managers should carefully consider their risk preferences and priorities before searching for executive candidates. In another hand, it is important for firms to evaluate whether the risk-taking behaviours of applicants are suitable for the firm's values and risk preferences. Simultaneously, firms need to create an effective motivation system that takes into account both financial and intangible motivation (Guo *et al.*, 2020). Establishing appropriate incentives to effectively coordinate the alignment of financial and intangible interests between shareholders and managers is crucial for promoting corporate development.

Second, family firms should balance their financial and intangible wealth to maximise family interests. Taking into consideration the emphasis on intangible wealth in family firms, placing excessive value on family business owners' intangible wealth can prove detrimental to the growth of the firm, such as innovation in our research. This is because promoting diversity within the firm need not always result in a loss of control but can instead serve as a catalyst for another form of sustainable growth.

This study also has several limitations that deserve to be addressed in future research. To begin with, the focus of our study is restricted to ex-military executives in Chinese firms. Chinese military culture differs from that of other nations; for instance, the duration of Chinese military service is shorter than in the American military (Lin *et al.*, 2021) and this shorter military experience may have a limited impact on their knowledge and resources. Future studies may utilise different country datasets to generalize our findings of the risk-taking behaviours of ex-military executives.

Second, we limited risky decisions of ex-military executives in corporations. Future studies can further examine the risk-taking behaviours of executives in other organizational contexts, such as non-governmental organizations and non-profit organizations (Luo *et al.*, 2017). Intangible wealth can be more important for the managers of these organizations. The results may provide interesting evidence for the critical role of intangible endowment appraisals in risk-taking behaviours. Future studies may also examine the interactions among financial and intangible endowments in risk-taking behaviours.

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Table1 Descriptive Statistics and Correlation Coefficients

Domestic_innovation_decisions_dataset		Observation	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Domestic_innovation_decisions	16,764	34.176	220.938	1														
2	Ex_military_executives	16,764	0.007	0.024	0.0007	1													
3	Political_executives	16,764	0.045	0.065	0.0130	0.0263*	1												
4	Political_ex_military_executives	16,764	0.002	0.011	0.0001	0.1210*	0.1267*	1											
5	Family_Firm	16,764	0.531	0.499	-0.0649*	-0.0077	-0.2583*	-0.0235*	1										
6	CEO_Salary	16,764	12.765	2.289	0.0465*	-0.0102	-0.0377*	-0.0140*	0.0607*	1									
7	Subsidies	16,764	0.013	0.019	-0.0006	0.0545*	-0.0375*	0.0047	0.0540*	0.0009	1								
8	High-tech_industry	16,764	0.591	0.492	0.0430*	0.0159*	-0.1962*	-0.0467*	0.1705*	0.0090	0.1197*	1							
9	Intangible_asset	16,764	18.381	2.319	0.1284*	-0.0264*	0.0251*	-0.0497*	-0.0544*	0.0674*	-0.0815*	0.0408*	1						
10	Leverage	16,764	1.111	1.466	0.0376*	0.0093	0.1961*	0.0149*	-0.2087*	-0.0148*	-0.0911*	-0.1888*	0.0431*	1					
11	ROA	16,764	0.044	0.051	0.0095	-0.0018	-0.0360*	-0.0017	0.1330*	0.1317*	0.0271*	0.0766*	0.0265*	-0.2681*	1				
12	Firm_age	16,764	2.101	0.744	0.0590*	-0.0354*	0.1262*	0.0202*	-0.3962*	-0.0630*	-0.1057*	-0.1985*	0.0611*	0.2079*	-0.2647*	1			
13	Firm_size	16,764	22.028	1.322	0.2313*	-0.0297*	0.2364*	-0.0002	-0.3141*	0.0916*	-0.1537*	-0.2448*	0.3546*	0.4195*	-0.0321*	0.3076*	1		
14	Financial_slack	16,764	2.639	2.935	-0.0431*	0.0252*	-0.1290*	-0.0135*	0.2525*	0.0458*	0.2018*	0.2050*	-0.1166*	-0.2986*	0.2375*	-0.3663*	-0.2903*	1	
15	Competitors	16,764	106.073	77.559	0.0752*	0.0135*	-0.1881*	-0.0354*	0.1790*	0.0675*	0.0646*	0.6321*	0.0069	-0.1188*	0.0235*	-0.0528*	-0.1104*	0.1466*	1
Asterisk * denotes statistical significance at or below 5% level																			
Overseas_expansion_decisions_dataset		Observation	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Overseas_expansion_decisions	7,491	0.315	1.679	1														
2	Ex_military_executives	7,491	0.006	0.019	0.0095	1													
3	Political_executives	7,491	0.041	0.059	0.0096	0.0263*	1												
4	Political_ex_military_executives	7,491	0.002	0.011	0.0367*	0.1210*	0.1267*	1											
5	Family_Firm	7,491	0.604	0.489	0.0194	-0.0077	-0.2583*	-0.0235*	1										
6	CEO_Salary	7,491	12.892	2.084	-0.0043	-0.0102	-0.0377*	-0.0140*	0.0607*	1									
7	Subsidies	7,491	0.013	0.017	0.0095	0.0545*	-0.0375*	0.0047	0.0540*	0.0009	1								
8	High-tech_industry	7,491	0.622	0.485	-0.0048	0.0159*	-0.1962*	-0.0467*	0.1705*	0.0090	0.1197*	1							
9	Intangible_asset	7,491	18.335	1.964	-0.0144	-0.0264*	0.0251*	-0.0497*	-0.0544*	0.0674*	-0.0815*	0.0408*	1						
10	Leverage	7,491	1.107	1.433	0.0075	0.0093	0.1961*	0.0149*	-0.2087*	-0.0148*	-0.0911*	-0.1888*	0.0431*	1					
11	ROA	7,491	0.044	0.052	0.0025	-0.0018	-0.0360*	-0.0017	0.1330*	0.1317*	0.0271*	0.0766*	0.0265*	-0.2681*	1				
12	Firm_age	7,491	2.015	0.748	-0.0328*	-0.0354*	0.1262*	0.0202*	-0.3962*	-0.0630*	-0.1057*	-0.1985*	0.0611*	0.2079*	-0.2647*	1			
13	Firm_size	7,491	21.943	1.268	0.0008	-0.0297*	0.2364*	-0.0002	-0.3141*	0.0916*	-0.1537*	-0.2448*	0.3546*	0.4195*	-0.0321*	0.3076*	1		
14	Financial_slack	7,491	2.668	2.935	0.0348*	0.0252*	-0.1290*	-0.0135*	0.2525*	0.0458*	0.2018*	0.2050*	-0.1166*	-0.2986*	0.2375*	-0.3663*	-0.2903*	1	
15	Competitors	7,491	113.397	81.658	-0.0326*	0.0135*	-0.1881*	-0.0354*	0.1790*	0.0675*	0.0646*	0.6321*	0.0069	-0.1188*	0.0235*	-0.0528*	-0.1104*	0.1466*	1
Asterisk * denotes statistical significance at or below 5% level																			

Table2 Main regression results

DV:	Domestic_innovation_decisions			Overseas_expansion_decisions		
Method:	Two-way fixed-effects negative binomial regression			Two-way fixed-effects panel regression		
Model:	Model1	Model2	Model3	Model4	Model5	Model6
Control:						
Political_executives	-0.620*** [-4.06]	-0.634*** [-4.15]	-0.630*** [-4.13]	0.19 [0.30]	0.195 [0.31]	0.231 [0.37]
Political_ex_military_executives	0.406 [0.52]	0.338 [0.43]	0.314 [0.40]	4.158 [1.24]	4.262 [1.27]	4.509 [1.34]
CEO_salary	0.002 [0.62]	0.002 [0.76]	0.002 [0.76]	-0.015 [-1.22]	-0.016 [-1.28]	-0.016 [-1.30]
Subsidies	0.483 [1.01]	0.445 [0.93]	0.452 [0.95]	-4.478** [-2.01]	-4.495** [-2.02]	-4.533** [-2.05]
High-tech_industry	0.153*** [4.24]	0.151*** [4.18]	0.151*** [4.17]	-0.006 [-0.04]	-0.007 [-0.05]	-0.004 [-0.03]
Intangible_asset	0.016*** [3.22]	0.017*** [3.35]	0.017*** [3.36]	0.008 [0.20]	0.01 [0.23]	0.011 [0.26]
Leverage	-0.025*** [-3.49]	-0.026*** [-3.69]	-0.027*** [-3.72]	0.031 [0.83]	0.032 [0.88]	0.035 [0.94]
ROA	1.099*** [6.34]	1.109*** [6.40]	1.111*** [6.41]	0.82 [1.48]	0.807 [1.46]	0.821 [1.49]
Firm_age	0.024 [1.18]	0.007 [0.33]	0.008 [0.37]	0.243** [2.45]	0.237** [2.38]	0.235** [2.36]
Firm_size	0.178*** [14.29]	0.172*** [13.63]	0.172*** [13.63]	-0.145* [-1.70]	-0.147* [-1.73]	-0.147* [-1.73]
Financial_slack	0.003 [0.83]	0.003 [0.74]	0.003 [0.75]	0.023 [1.48]	0.023 [1.45]	0.023 [1.47]
Competitors	0.001** [2.44]	0.001** [2.54]	0.001** [2.55]	-0.001 [-1.17]	-0.001 [-1.22]	-0.001 [-1.23]
IV:						
Ex_military_executives		0.922** [2.20]	1.579*** [2.94]		-2.778** [-2.38]	-7.084*** [-2.75]
Moderator:						
Family_Firm		-0.092*** [-3.06]	-0.082*** [-2.68]		0.089 [0.57]	0.054 [0.34]
Cross:						
Ex_military_Executives*Family_Firm			-1.493* [-1.84]			6.893** [2.44]
Constant:	-4.322*** [-15.05]	-4.142*** [-14.11]	-4.145*** [-14.12]	2.247 [1.33]	2.221 [1.32]	2.181 [1.29]
Firm_fixed_effects	YES	YES	YES	YES	YES	YES
Year_effects	YES	YES	YES	YES	YES	YES
Wald_chi2/F-value	3331.55	3353.73	3360.12	1.835	1.824	1.852
df	22	24	25	-	-	-
Usable_observations	14345	14345	14345	6630	6630	6630

***Coefficients significant at the 1% level; **significant at the 5% level; * significant at the 10% level.

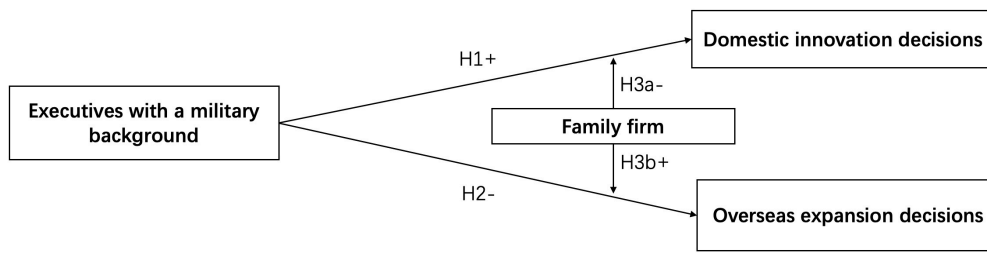


Figure1 Research Model

	Ex-Military Executives	Family Firm Owners
Domestic	Enjoy: Personal Reputation Position Promotion	Loss: Control of the Firm by the Family
Overseas	Loss: Personal Reputation Position Promotion	Enjoy: Survival of the Family Firm Reputation of the Family

Figure 2 Intangible wealth in risky decisions

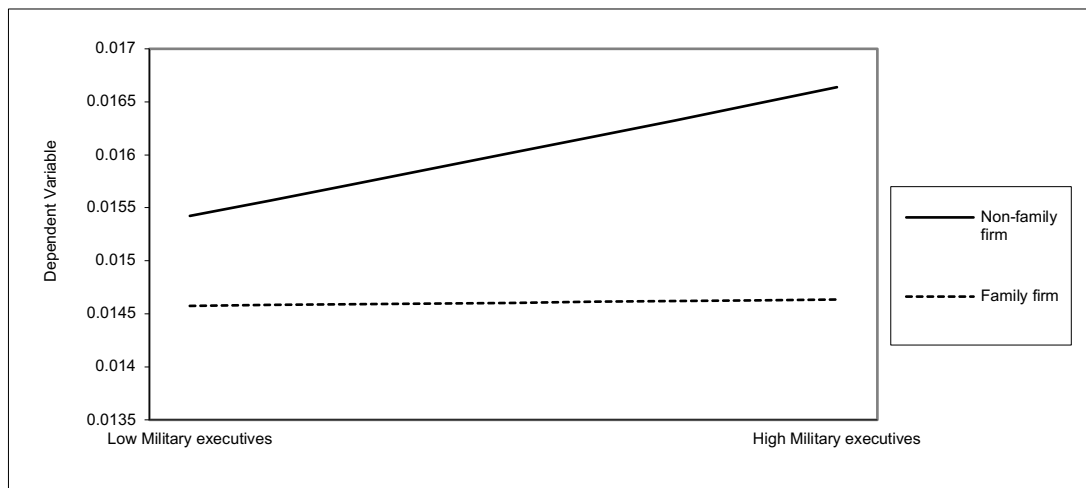


Figure3 Moderating Effects of Family firms

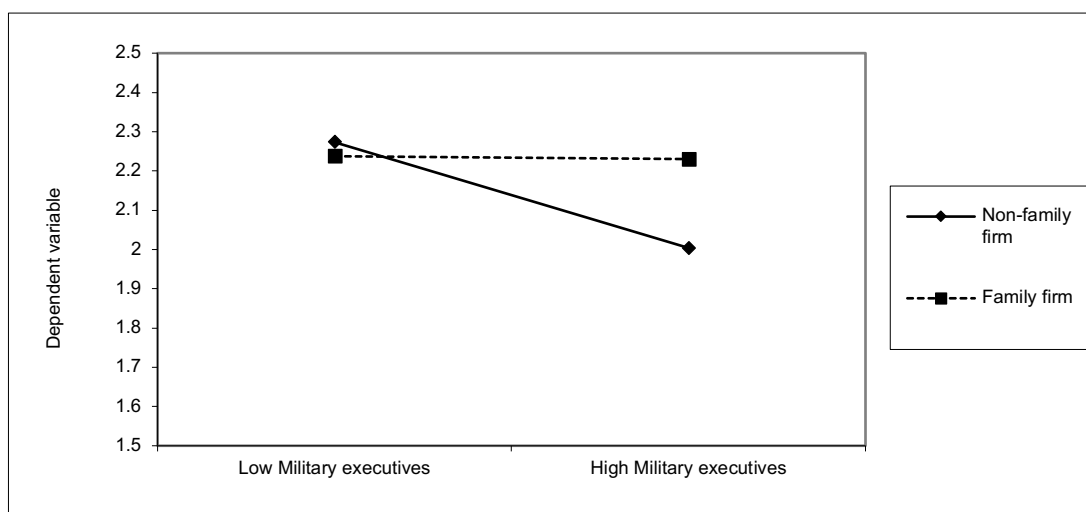


Figure4 Moderating Effects of Family firms

APPENDIX

Table3 Robust test results (Adding R&D as control variable)

DV:	Domestic_innovation_decisions			Overseas_expansion_decisions		
Method:	Two-way fixed-effects negative binomial regression			Two-way fixed-effects panel regression		
Model:	Model7	Model8	Model9	Model10	Model11	Model12
Control:						
Political_executives	-0.705*** [-4.25]	-0.728*** [-4.39]	-0.726*** [-4.38]	0.226 [0.36]	0.231 [0.37]	0.266 [0.42]
Political_ex_military_executives	0.286 [0.34]	0.269 [0.32]	0.21 [0.25]	4.004 [1.20]	4.104 [1.23]	4.352 [1.30]
R&D	0.004** [2.54]	0.004** [2.52]	0.004** [2.51]	-0.005 [-1.38]	-0.005 [-1.40]	-0.005 [-1.37]
CEO_salary	0.003 [0.77]	0.003 [0.94]	0.003 [0.98]	-0.016 [-1.25]	-0.016 [-1.30]	-0.017 [-1.33]
Subsidies	0.141 [0.26]	0.099 [0.18]	0.096 [0.18]	-4.501** [-2.02]	-4.518** [-2.03]	-4.554** [-2.06]
High-tech_industry	0.192*** [4.90]	0.188*** [4.81]	0.188*** [4.80]	0.003 [0.02]	0.002 [0.01]	0.005 [0.03]
Intangible_asset	0.013** [2.14]	0.014** [2.24]	0.014** [2.25]	0.009 [0.21]	0.01 [0.24]	0.011 [0.27]
Leverage	-0.029*** [-3.71]	-0.031*** [-3.95]	-0.032*** [-4.01]	0.03 [0.82]	0.032 [0.87]	0.035 [0.93]
ROA	1.087*** [5.72]	1.097*** [5.77]	1.093*** [5.75]	0.82 [1.48]	0.806 [1.46]	0.82 [1.49]
Firm_age	0.022 [0.98]	0.003 [0.15]	0.004 [0.17]	0.221** [2.24]	0.214** [2.17]	0.213** [2.16]
Firm_size	0.182*** [13.16]	0.174*** [12.46]	0.174*** [12.46]	-0.143* [-1.68]	-0.146* [-1.71]	-0.145* [-1.71]
Financial_slack	0.001 [0.23]	0.001 [0.14]	0 [0.12]	0.023 [1.49]	0.023 [1.46]	0.023 [1.48]
Competitors	0 [1.58]	0.000* [1.65]	0.000* [1.65]	-0.001 [-1.18]	-0.001 [-1.23]	-0.001 [-1.24]
IV:						
Ex_military_Executives		1.046** [2.01]	1.904*** [2.74]		-2.786** [-2.38]	-7.040*** [-2.72]
Moderator:						
Family_Firm		-0.108*** [-3.32]	-0.098*** [-2.96]		0.092 [0.59]	0.057 [0.36]
Cross:						
Ex_military_Executives*Family_Firm			-1.644* [-1.70]			6.804** [2.40]
Constant:	-4.336*** [-14.31]	-4.111*** [-13.23]	-4.114*** [-13.24]	2.695 [1.53]	2.692 [1.52]	2.655 [1.50]
Firm_fixed_effects	YES	YES	YES	YES	YES	YES
Year_effects	YES	YES	YES	YES	YES	YES
Wald_chi2/F-value	2921.87	2945.52	2951.81	1.763	1.755	1.778
df	23	25	26	-	-	-
Usable_observations	11613	11613	11613	6619	6619	6619

***Coefficients significant at the 1% level; **significant at the 5% level; * significant at the 10% level.

Table4 Robust test results (Replacing independent variable)

DV:	Domestic_innovation_decisions			Overseas_expansion_decisions		
Method:	Two-way fixed-effects negative binomial regression			Two-way fixed-effects panel regression		
Model:	Model13	Model14	Model15	Model16	Model17	Model18
Control:						
Political_TMT	-0.252*	-0.250*	-0.245*	-0.146	-0.144	-0.117
	[-1.78]	[-1.78]	[-1.74]	[-0.26]	[-0.26]	[-0.21]
Political_ex_military_TMT	0.234	-0.062	0.105	3.052	3.119	3.202
	[0.42]	[-0.11]	[0.18]	[0.93]	[0.95]	[0.98]
CEO_salary	0.002	0.002	0.003	-0.016	-0.016	-0.017
	[0.71]	[0.84]	[0.88]	[-1.24]	[-1.26]	[-1.32]
Subsidies	0.462	0.431	0.444	-4.420**	-4.412**	-4.402**
	[0.97]	[0.90]	[0.93]	[-1.98]	[-1.98]	[-1.98]
High-tech_industry	0.156***	0.155***	0.153***	-0.007	-0.005	0.005
	[4.32]	[4.28]	[4.23]	[-0.04]	[-0.03]	[0.03]
Intangible_asset	0.016***	0.017***	0.017***	0.01	0.01	0.011
	[3.19]	[3.30]	[3.32]	[0.25]	[0.25]	[0.29]
Leverage	-0.026***	-0.027***	-0.027***	0.03	0.03	0.033
	[-3.62]	[-3.74]	[-3.72]	[0.82]	[0.83]	[0.89]
ROA	1.109***	1.113***	1.117***	0.797	0.789	0.807
	[6.40]	[6.42]	[6.45]	[1.44]	[1.42]	[1.46]
Firm_age	0.022	0.006	0.007	0.245**	0.244**	0.246**
	[1.09]	[0.27]	[0.33]	[2.48]	[2.48]	[2.49]
Firm_size	0.172***	0.166***	0.165***	-0.145*	-0.146*	-0.144*
	[13.95]	[13.26]	[13.23]	[-1.71]	[-1.71]	[-1.69]
Financial_slack	0.003	0.003	0.003	0.023	0.023	0.024
	[0.82]	[0.79]	[0.79]	[1.49]	[1.49]	[1.52]
Competitors	0.001**	0.001**	0.001***	-0.001	-0.001	-0.001
	[2.48]	[2.56]	[2.60]	[-1.23]	[-1.24]	[-1.27]
IV:						
Ex_military_TMT		0.921***	1.742***		-0.587	-5.007*
		[2.97]	[4.41]		[-0.41]	[-1.82]
Moderator:						
Family_Firm		-0.090***	-0.082***		0.087	0.073
		[-2.97]	[-2.70]		[0.55]	[0.46]
Cross:						
Ex_military_TMT*Family_Firm			-1.462***			6.871**
			[-2.64]			[2.18]
Constant:	-4.213***	-4.032***	-4.029***	2.685	2.647	2.59
	[-14.78]	[-13.82]	[-13.81]	[1.54]	[1.52]	[1.48]
Firm_fixed_effects	YES	YES	YES	YES	YES	YES
Year_effects	YES	YES	YES	YES	YES	YES
Wald_chi2/F-value	3311.31	3333.91	3343.7	1.9	1.806	2.01
df	22	24	25			
Usable_observations	14345	14345	14345	6630	6630	6630

***Coefficients significant at the 1% level; **significant at the 5% level; * significant at the 10% level.