Full reference: Noureldeen, E., Mahran, K & Elamer, A.A. (2026) 'Commanding Corporate Narratives: How Military-Experienced Leaders Shape Corporate Communication', ***Leadership Quarterly,*** **(Accepted 15-Jan-2026).**

Commanding Corporate Narratives: How Military-Experienced Leaders Shape Corporate Communication

Running head: How Military-Experienced Leaders Shape Corporate Communication

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Commanding Corporate Narratives: How Military-Experienced Leaders Shape Corporate Communication

Abstract

This study explores the enduring influence of military imprints on corporate leaders and their implications for corporate narrative disclosures. Drawing upon insights from imprinting, upper echelons, and strategic leadership theories, we argue that military experiences shape executives' decision-making and communication styles persistently. Utilizing a dataset of 29,633 firm-year observations from 2010 to 2021, we find that military imprints translate into distinct communication patterns, evident in a positive tone in corporate disclosures. We further explore the relationship within varying ownership structures, identifying contextual factors that modulate this dynamic. Our findings have withstood rigorous tests for robustness, thereby providing additional strength to the credibility of our research. Our findings contribute to the literature on imprinting theory, leadership, and corporate communication, underscoring the multifaceted influence of military experience on executives' decision-making and disclosure styles. Simultaneously, it imparts pragmatic insights for both corporate leaders and stakeholders alike.

Keywords: CEO; Executives; Senior Management; Tone; Textual Analysis; Imprinting Theory; Ownership.

1. Introduction

Empirical studies have increasingly highlighted the significant influence of corporate leaders with military backgrounds on corporate financial outcomes (Law & Mills, 2017; Marquis & Tilcsik, 2013; Wen et al., 2023; Zhang et al., 2022). However, given the acknowledged importance of corporate narrative disclosure in shaping stakeholder perceptions and organizational strategies, the literature has yet to extend its examination to the influence of military-experienced executives on communication styles within corporations (Davis et al., 2015; Marquez-Illescas et al., 2019). Filling this gap is crucial because military-experienced executives possess unique characteristics such as resilience, strategic thinking, and hierarchical leadership (Zhang et al., 2022), which may significantly impact communication styles in corporate settings.

In the context of corporate communication, narrative disclosures hold a prominent position, constituting over 70% of annual reports (Li, 2010) and delivering valuable insights to external stakeholders (Francis et al., 2002; Ormiston et al., 2022). Researchers have increasingly recognized their significance, particularly the tone of these disclosures. Disclosure tone refers to the sentiment and psychological qualities embedded in the message (Huang et al., 2014) and can be conceived as an "atmosphere" primarily influenced by corporate leadership (Patelli & Pedrini, 2015). It complements factual information by conveying the attitude and sentiment of the communicator, offering depth and context (Huang et al., 2014). While content follows strict regulations, tone remains largely voluntary, granting executives the freedom to align narratives with strategic goals (Campbell & Shang, 2022). A positive tone fosters trust and stakeholder participation, conveying confidence in the organization's vision and capabilities (Davis et al., 2015; Henry & Leone, 2016), while a negative tone can evoke doubt and disengagement (Martikainen et al., 2022). Consequently, disclosure tone serves as a potent instrument in shaping perceptions, influencing decision-making, and reflecting leadership styles and experiences.

This study investigates whether military-experienced executives (CEOs and chairmen) influence disclosure tone within China's unique cultural, political, and regulatory landscape. This context stems from a historical shift in 1985, when troop reduction policies led military personnel to transition into civilian sectors, facilitating their integration into entrepreneurial and corporate roles (Chang et al., 2023). Culturally, Confucian values emphasizing hierarchical structures and collective harmony influence leadership styles and communication patterns among executives

(Chen et al., 2021). The concept of "li" (礼), which guides proper conduct and etiquette, reinforces these hierarchical structures and respect for authority (Xu & Dellaportas, 2021; Yuan et al., 2023). Additionally, the concept of "face" (面子) plays a crucial role in maintaining social harmony and projecting a positive image, which military-experienced leaders might prioritize in their disclosures to reflect strength and competence (Dong & Lee, 2007; Hu, 1944). Politically, alignment with the Chinese Communist Party's (CCP) priorities guides corporate decision-making and disclosure tone (Jia, 2014). Together, these factors create a dynamic environment that warrants investigation into the relationship between military experience and corporate disclosure tone within China.

To explore the potential link between military experience and corporate disclosure tone, we adopt an integrated framework that combines insights from upper echelons, strategic leadership, and imprinting theories. Upper echelons theory emphasizes how executives' characteristics shape organizational outcomes (Hambrick & Mason, 1984) but does not fully address how these values shape leaders' strategic vision and overall approach to leadership. Strategic leadership theory adds attention to long-term strategy formulation (Samimi et al., 2022). However, both theories fall short in explaining the impact of military experience on corporate disclosure tone. Additionally, neither theory addresses how nature and timing of experience affect their cognition, which in turn shape their decisions. To address these gaps, we completed this framework by borrowing insights from imprinting theory, which suggest that early career experiences—like military service—leave lasting cognitive and behavioral imprints that persist over time (Stinchcombe, 1965).

We argue that military experience imprints values such as teamwork, resilience, and a strong sense of purpose (Koch-Bayram & Wernicke, 2018; Marquis & Tilcsik, 2013; Seligman, 2011). In military environments, positive communication encourages collective effort and reinforces responsibility, even under challenging circumstances (Horn & Walker, 2008; Taylor, 2018). Upon transitioning to the corporate context, these values may shape executives' strategic communication, particularly in narrative disclosures. In China, these imprinted values naturally align with prevailing cultural expectations, further reinforcing the adoption of a positive tone. For military leaders, maintaining a positive disclosure style becomes essential to advancing both their personal and organizational image. In doing so, they transfer the credibility and discipline gained

through military service into the corporate domain, strengthening their legitimacy and signaling a commitment to cohesion and long-term success. We further posit that the strength of this relationship is moderated by corporate ownership structure. In state-owned enterprises (SOEs), rigid bureaucratic structures and political oversight may limit executives' autonomy in shaping communication strategies (Borisova et al., 2019; Genin et al., 2021). In contrast, non-SOEs often allow greater managerial discretion and strategic freedom (Ayyagari et al., 2011; Wang et al., 2022), enabling military-imprinted values to manifest more strongly in disclosure tone.

Using a dataset comprising 29,633 firm-year observations from Chinese non-financial firms listed on the Shanghai and Shenzhen Stock Exchanges from 2010 to 2022, our results substantiate these theoretical arguments. We find that military-experienced leaders are positively associated with a positive tone in corporate narrative disclosures. Moreover, this effect is more pronounced for CEOs in non-SOEs. Additional analyses reveal that military-experienced leaders shape a more positive disclosure tone primarily by increasing the use of positive wording, rather than by reducing the frequency of negative sentences. These results are robust to a range of econometric techniques, including alternative tone measures, firm-fixed effects, propensity score matching (PSM), and two-stage least squares (2SLS) estimation.

This research makes several key contributions. First, by examining the relationship between executives' military experience and corporate disclosure tone, we extend the literature on military-experienced leaders into the realm of corporate communication (Law & Mills, 2017; Wen et al., 2023; Xu et al., 2022; Zhang et al., 2022). This new perspective reveals how military values shape corporate disclosure styles, expanding current understandings of leadership influence. Second, by integrating insights from upper echelons, strategic leadership, and imprinting theories, our study provides a more rigorous framework for understanding how military values shape leadership communication strategies (Hambrick, 2007; Samimi et al., 2022). This integration enhances the broader leadership literature by offering deeper insights into how leaders' backgrounds affect organizational communication. Third, we contribute to the study of corporate disclosure tone by demonstrating how military experience directly influences disclosure styles, revealing new determinants of corporate communication (Chang et al., 2023; Fu et al., 2021; Rogers et al., 2011). Finally, we highlight the moderating role of institutional contexts, specifically

corporate ownership, in either amplifying or constraining the impact of military experience on disclosure tone, thus identifying important boundary conditions for these effects.

The structure of this paper is as follows: In Section 2, we establish the theoretical background and research context; Section 3 comprises the literature review and hypothesis development; Section 4 outlines the research design, encompassing data collection, and research models; Section 5 showcases the empirical findings. Section 6 presents additional tests and robustness checks; and, finally, in Section 7, we provide our discussion and concluding remarks.

2. Theoretical Background and Research Context

2.1 Theoretical Background

A leader's background profoundly influences organizational outcomes, yet prior research often treats this effect either as a passive imprint or as a direct determinant of strategic choices. We propose an integrative perspective that captures both the persistence of imprinted traits and the strategic agency of leaders in shaping disclosure tone. Upper echelons theory asserts that executives' values and experiences shape firm outcomes through their influence on decision-making (Hambrick & Mason, 1984). Prior life experiences—such as international exposure or elite education—affect strategic choices like IPOs or international expansion by shaping risk perceptions and legitimacy (Bai et al., 2020; Bloodgood et al., 1996). In China, executives with military backgrounds may carry values rooted in discipline, sense of duty, and serving the long-term welfare of society (Zhang et al., 2022). Despite its strengths, upper echelons theory has limitations, particularly in how it addresses the broader implications of executives' experiences on leadership mindset and strategic vision. While it effectively illustrates the impact of individual values on decision-making processes, it does not fully account for how these experiences inform a leader's approach to long-term organizational strategy.

Strategic leadership theory adds a forward-looking lens by highlighting how leaders use their backgrounds to guide organizations toward long-term goals (Samimi et al., 2022). This theory posits that leaders use their accumulated experiences, values, and insights to guide organizations toward long-term success, balancing immediate operational needs with forward-thinking, strategic objectives (Finkelstein et al., 2009). Thus, by integrating both upper echelons and strategic leadership theories, we create a more comprehensive framework that captures the nature of executive influence on organizational outcomes. In terms of the effect of executives' military

experience on corporate disclosure tone, mere exposure to this experience is insufficient for developing a deep understanding of its implications, and these leadership theories exhibit notable limitations in this regard. Upper echelons theory often overlooks the complexity of how personal experiences translate into specific communication practices. While it establishes a link between an executive's values and organizational outcomes, it fails to account for the variability in how individuals interpret and apply these values in their leadership roles. On the other hand, strategic leadership theory emphasizes the strategic dimensions of leadership but tends to neglect the communicative aspects. Furthermore, both theories fall short in addressing how the timing of managerial experiences affects their impact on subsequent decisions. They also do not specify how the nature of an experience influences managerial cognition, which in turn shapes decision-making (Bai et al., 2020). To address these limitations, we propose integrating insights from imprinting theory (Zhang et al., 2022).

Imprinting theory, introduced by Stinchcombe (1965), underscores two key components: the sensitive period and the enduring impact of experiences accrued during this phase (Higgins, 2005). In this regard, military service often serves as a critical sensitive period, where the intense, regimented environment imprints values such as discipline, integrity, and strategic thinking on individuals (Kish-Gephart & Campbell, 2015). These imprinted values significantly shape how leaders approach their roles, influencing their decision-making processes, communication styles, and overall leadership effectiveness (Wen et al., 2023). As these leaders transition into corporate settings, the lessons learned during their military training inform their strategic vision and organizational practices (Zhang et al., 2022). Moreover, institutional logics, which are deeply embedded in individuals' cognition and preferences, further influence how these leaders perceive, evaluate, and respond to environmental stimuli (Bai et al., 2020). Consequently, the insights from imprinting theory illuminate how foundational experiences create enduring influences that extend well beyond the initial context, ultimately shaping leaders' long-term behaviors.

In conclusion, integrating upper echelons theory, strategic leadership theory, and imprinting theory provides a comprehensive understanding of leadership dynamics within organizations. Together, these theories complement one another, synthesizing a cohesive perspective that not only combines their strengths but also addresses their individual limitations.

2.2 Research context

China offers a distinctive environment for examining the influence of military-experienced executives on corporate communication styles, given its unique political, cultural, and regulatory landscape. Historically, the 1985 troop reduction initiated a wave of military personnel transitioning into civilian sectors, supported by government policies that facilitated their entry into diverse industries (Chang et al., 2023; Zhang et al., 2022). This integration of military-trained individuals into corporate leadership presents a rich context for exploring how military values might shape corporate disclosures, especially regarding communication tone.

Culturally, Confucian values serve as a foundation for Chinese society, with the concept of "li" guiding proper conduct and etiquette in interpersonal relationships (Chen et al., 2021; Yuan et al., 2023). This framework emphasizes hierarchy, respect for authority, and seniority, which manifest in corporate settings as centralized decision-making and clear chains of command (Xu & Dellaportas, 2021). Employees are typically expected to defer to higher positions, reinforcing hierarchical relationships within organizations (Liu et al., 2016). Military-experienced executives align naturally with these Confucian principles due to their training in strict hierarchical structures, where discipline, loyalty, and collective responsibility are essential. This cultural alignment encourages military-influenced executives to adopt a positive communication style that highlights team achievements and collective goals (Pavićević & Keil, 2024; Chen et al., 2021), promoting unity within the organization and underscoring the importance of organizational harmony in effective leadership (Yuan et al., 2023).

Moreover, the concept of "face" plays a crucial role in Chinese culture, encompassing a person's reputation, dignity, and social standing within the community (Dong & Lee, 2007; Hu, 1944). Face serves as both a projection of self-image and a social currency, fostering trust and relationship-building (Gao et al., 2017; Hu, 1944). The extent of face granted often depends on an individual's social status and interpersonal interactions, underscoring the significance of perception (Lv, 2024). For military-experienced executives, frequently seen as symbols of discipline and authority, the stakes in preserving face are high (Zhang et al., 2022). These leaders understand the weight of their past experiences and the expectations placed upon them (Pavićević & Keil, 2024). Consequently, they may prioritize a positive disclosure tone in corporate communications to safeguard their own face as well as the face of their organization.

Politically, the Communist Party exerts substantial influence over business practices in China, closely intertwining political priorities with corporate governance (Schuler et al., 2017; Wang et al., 2024). As the CCP emphasizes national stability, economic development, and social harmony, companies are expected to align their strategies and communications with these objectives (Zhao et al., 2024). Military-experienced executives may feel a heightened obligation to reflect these priorities due to their past service and loyalty to national goals. Consequently, these leaders are inclined to adopt a positive, progress-oriented disclosure tone, emphasizing achievements in alignment with governmental policies and contributions to national development. This tone aligns with the CCP's goals of economic stability and unity, creating a mutually reinforcing relationship between corporate messaging and government priorities.

The regulatory environment in China further shapes corporate practices (Borisova et al., 2019; Higgins, 2005). Through an extensive framework of laws and policies aimed at promoting stability and national security, the government exercises significant control over businesses (Marquis & Tilcsik, 2013; Xu et al., 2022). Compliance with these regulations is mandatory and central to maintaining good standing with the government and stakeholders (Greve & Zhang, 2017). In such a highly regulated environment, executives are required to navigate complex frameworks, ensuring that their communications reflect transparency, accountability, and alignment with national goals (Luo et al., 2017). Military-experienced executives, accustomed to structured, rule-bound systems, may be particularly adept at ensuring alignment with regulatory expectations. This alignment further supports a positive tone in corporate communications, reinforcing the company's credibility and trustworthiness by projecting a responsible and progressive image to both regulators and stakeholders.

In a country where relationships and trust are paramount, stakeholders have distinct expectations of corporate communication tone (Huang et al., 2014). Employees look to corporate communications for guidance and reassurance, and a positive tone fosters a supportive work environment (Campbell & Shang, 2022). Investors often interpret a positive communication tone as a sign of stability and growth potential, influencing investment decisions (Chang et al., 2023). Similarly, government agencies, industry associations, and strategic partners assess corporate communications for alignment with shared objectives, credibility, and reliability (Du & Kuo,

2023). Positive communication with these stakeholders further supports a sense of mutual trust, enhancing regulatory relationships and collaborative efforts.

Given the historical significance of the military in Chinese society, the presence of military-experienced executives in leadership symbolizes strength, resilience, and commitment to national prosperity (Jennings & Hannah, 2011). Such backgrounds evoke patriotic sentiment, resonating with stakeholders' pride in national values and identity (Wesley, 2022). A positive communication tone aligns with patriotic sentiments by emphasizing progress and collective achievement. Companies often highlight contributions to economic growth and societal development, framing them as essential to national prosperity, reinforcing unity and solidarity. This strategic alignment with cultural values like loyalty and duty enhances the company's brand image and reputation, establishing it as an authentic, trustworthy entity within the Chinese market. This resonance with cultural identity fosters brand loyalty and positive word-of-mouth, reinforcing the company's long-term market position and resilience (Bartikowski et al., 2021; Mahran & Elamer, 2025a).

3. Literature Review and Hypotheses Development

3.1 Narrative disclosure tone

Managerial disclosure plays a central role in corporate communication, serving as a key mechanism through which firms convey information and shape stakeholder perceptions (Huang et al., 2014; Mercer, 2004). While financial statements remain important, researchers have increasingly recognized the critical value of narrative disclosures, which comprise over 70% of annual reports (Li, 2010). These narratives provide insight not just into what firms report, but also how they choose to frame strategic direction, organizational identity, and leadership intent (Francis et al., 2002; Ormiston et al., 2022). Given the significance of narrative disclosure in shaping stakeholder perceptions and guiding organizational strategies, there has been a rising scholarly interest in its qualitative attributes (e.g., Caglio et al., 2020; D'Augusta & DeAngelis, 2020; Henry & Leone, 2016; Huang et al., 2014; Loughran & McDonald, 2016; Ormiston et al., 2022). Central to this narrative framework lies the crucial element of tone.

Narrative tone refers to the emotional and psychological character embedded within corporate messages (Huang et al., 2014). It can be understood as an "atmosphere" shaped by

leadership and is increasingly seen as an extension of executive style and strategic intent (Mahran & Elamer, 2024; Patelli & Pedrini, 2015). Tone plays a crucial role in sense-making, influencing how stakeholders interpret firm identity, confidence, and credibility (Den Hartog & Verburg, 1997; Heracleous & Barrett, 2001; Weick et al., 2005). It also serves as a useful qualitative indicator of firm performance and leadership values, especially in contexts where facts alone may not capture strategic nuance (Henry & Leone, 2016; Li, 2010). Tone can exhibit a spectrum of emotional qualities, varying from positive, which embodies characteristics such as optimism, encouragement, and confidence, to negative, which encompasses elements such as pessimism, skepticism, or criticism (Loughran & McDonald, 2016). A positive tone fosters trust and engagement by projecting strategic clarity and confidence in the organization's trajectory (Davis et al., 2015), while a negative tone may introduce doubt, weakening stakeholder confidence and raising concerns over credibility or uncertainty (Martikainen et al., 2022). Both tone types play critical roles in shaping stakeholder perceptions and engagement with the narrative, thereby exerting a profound impact on organizational outcomes and reputation (Loughran & McDonald, 2016; Mahran & Elamer, 2024; Rogers et al., 2011).

Unlike disclosure content, which is typically regulated and subject to audit, tone remains largely voluntary and unregulated (Campbell & Shang, 2020). This gives executives considerable latitude in shaping how their message is perceived. While content provides the "what" of the message, tone delivers the "how" by conveying the attitude, sentiment, and demeanor of the communicator (Chang et al., 2023; Huang et al., 2023). Additionally, while content may be interpreted objectively, tone introduces subjectivity, allowing for a more differentiated expression of corporate leadership's emotional stance and cultural values (Davis & Tama-Sweet, 2012). For all these reasons, disclosure tone is uniquely positioned to serve as a powerful instrument in shaping perceptions, influencing decision-making, and ultimately driving stakeholder behavior, while also reflecting the imprint of corporate executives' leadership styles and experiences.

3.2 Executives' military background and narrative disclosure tone

Prior research suggests that military service is a transformative journey, profoundly shaping individuals' beliefs, values, and leadership styles, which influence their decision-making throughout their lives (Pavićević & Keil, 2024; Wen et al., 2023; Zhang et al., 2022). Imprinting

Theory (Stinchcombe, 1965) provides a useful lens for understanding this effect, positing that early-career experiences create enduring cognitive patterns that persist over time. Military training instills discipline, resilience, and structured decision-making, reinforcing these traits as individuals progress through their careers (Marquis & Tilcsik, 2013; Zhang et al., 2022).

One of the most persistent imprints left by military service is a structured, confident communication style. In high-stress environments, positive and mission-driven communication fosters team cohesion, morale, and performance (Duffy, 2006; Burris, 2006). Military leaders are trained to use clear, affirmative, and authoritative messaging to maintain order and boost collective efficiency (Robinson et al., 2022). These communication patterns often extend into corporate settings, where military-experienced executives retain their preference for structured, positive corporate disclosures.

Empirical evidence supports this long-term imprinting effect. Benmelech & Frydman (2015) find that U.S. CEOs with military backgrounds are less likely to engage in corporate fraud, suggesting a commitment to integrity and transparent communication. However, Lin et al. (2021) find that military-experienced executives in China engage in more corporate violations than their non-military counterparts, potentially due to the country's informal business culture, reliance on guanxi (relationship networks), and lower external monitoring (Jia, 2014; Su et al., 2023). This contrast highlights the role of institutional context in shaping military-imprinted behaviors in corporate settings.

While imprinting theory explains why military leaders adopt certain behaviors, it does not fully explain how these traits manifest at the firm level. Upper Echelons Theory (Hambrick & Mason, 1984) provides the necessary bridge, arguing that executives' backgrounds systematically shape firm outcomes, including disclosure styles. Because military-experienced executives have been conditioned to lead with a structured, disciplined mindset, they are more likely to foster transparent, mission-oriented corporate cultures (Law & Mills, 2017; Mahran & Elamer, 2025b). This extends to financial and risk management decisions—for example, Law & Mills (2017) show that military-experienced executives are less likely to engage in aggressive tax avoidance, and Cao et al. (2019) find that they reduce the likelihood of stock price crashes by limiting the concealment

of negative news. These tendencies suggest that military executives prioritize structured, clear, and ethically sound communication strategies.

Beyond shaping firm decisions, Strategic Leadership Theory (Finkelstein et al., 2009) highlights that corporate communication is not merely a reflection of past imprinting—it is a strategic tool executives use to influence stakeholder perceptions. Military-trained executives, accustomed to aligning communication with long-term mission objectives, use disclosure tone as an instrument to reinforce stability, investor confidence, and legitimacy (Samimi et al., 2022). This aligns with research showing that military leaders drive corporate social responsibility initiatives (Luo et al., 2017) and prioritize long-term sustainability over short-term financial gains (Ferdig, 2007).

This effect is particularly pronounced in China, where corporate messaging is closely linked to national objectives. The Chinese Communist Party's emphasis on national development, stability, and social responsibility influences corporate leadership behaviors (Schuler et al., 2017). Military-trained executives—who are accustomed to hierarchical, nationalistic environments—may align their disclosure tone with national priorities, reinforcing positive, stable, and forward-looking messaging (Zhang et al., 2022).

Additionally, military-experienced executives have demonstrated resilience in times of crisis, reinforcing their preference for a positive, steady disclosure tone. Lin et al. (2021) find that while military-trained executives in China underperform in normal conditions, they significantly outperform their non-military peers during industry downturns. This suggests that military executives apply their structured leadership and crisis management training to maintain stability in turbulent times, which is likely reflected in corporate disclosures.

We argue that these orientations can be reflected in corporate communications, where military-experienced leaders adopt a positive corporate disclosure tone that reinforces trust and confidence among stakeholders. This approach is essential for cultivating strong relationships within the competitive Chinese business environment, where stakeholders expect leaders to demonstrate authority and competence (Dong & Lee, 2007). Military-trained leaders are particularly mindful of the concept of "face", which emphasizes the importance of preserving dignity and reputation. By employing a positive communication style, they not only enhance their

personal image but also reflect the organization's commitment to excellence and reliability, thereby strengthening stakeholder confidence (Gao et al., 2017; Hu, 1944). Additionally, this positive disclosure tone aligns with the Communist Party's principles, ensuring that both organizational goals and broader national aspirations are achieved (Schuler et al., 2017). In this way, leaders effectively engage stakeholders, motivating them to align with the organization's vision and enhancing their confidence in its long-term success.

Taken together, Imprinting Theory explains why military-trained executives develop structured communication styles, Upper Echelons Theory explains how these styles manifest in firm-level decision-making, and Strategic Leadership Theory explains why executives actively deploy a positive disclosure tone to manage stakeholder confidence. This integrated framework predicts that military-experienced executives will demonstrate a systematically more positive disclosure tone than their non-military counterparts, as their training, decision-making tendencies, and strategic leadership discretion all reinforce this behavior. Based on the above discussion, we posit the following hypothesis:

H_1: *Military-experienced leaders (i.e., executives, CEO, and chairman) are positively associated with a positive tone in corporate narrative disclosure.*

3.3 The moderating role of state ownership

We argue that the influence of military-imprinted values on corporate disclosure tone is not uniform but contingent on the institutional environment, particularly the nature of ownership. While military experience shapes executives' behavior and communication, its expression depends on organizational contexts that either constrain or enable discretion (Tilcsik, 2014). We propose that state ownership moderates this relationship. State ownership operates within a state-centric framework, where political and social objectives often take precedence over market-driven goals such as innovation and efficiency (Carney et al., 2018; Greve & Zhang, 2017). SOEs are prevalent in various emerging economies, where the involvement of government entities as shareholders creates a distinct set of circumstances within which SOEs operate (Carney et al., 2018; Raynard et al., 2020; Noureldeen et al., 2024). Prior studies link state ownership to bureaucratic structures, slower decision-making, reduced profitability, and weaker corporate governance (Ayyagari et al., 2011; Li et al., 2018; Xu et al., 2014). In the Chinese context, the government maintains significant

control over enterprises, especially within critical sectors such as energy, telecommunications, and transportation (Xu et al., 2022).

We suggest that SOEs dynamics introduce complexities that influence leaders' decision-making, strategic direction, and communication strategies in ways that differ significantly from non-SOEs. In the context of SOEs, executives are responsible for aligning corporate activities with government policy objectives while navigating a bureaucratic culture characterized by rigid hierarchies and formal processes, where innovation often takes a lower priority (Ayyagari et al., 2011). This environment significantly impacts decision-making and organizational outcomes by necessitating a cautious, consensus-driven approach (Greve & Zhang, 2017). The requirement to navigate multiple layers of approval can slow responses to market dynamics, ultimately limiting the ability of military leaders to influence the tone of corporate disclosures effectively (Taylor, 2018; Wang et al., 2022). Furthermore, this bureaucratic culture can deeply affect military leaders' strategic vision. According to Strategic Leadership Theory, effective leaders must envision long-term goals and adapt strategies in response to changing conditions (Marquis & Tilcsik, 2013). However, the hierarchical nature of SOEs constrains military leaders' strategic thinking and agility (Robinson et al., 2022). This environment restricts the scope of strategic initiatives, compelling military leaders to focus more on compliance with existing policies rather than adopting innovative approaches, thereby hindering their ability to drive meaningful change (Klann, 2003; Taylor, 2018). As a result, the influence of military leaders on the positive tone of corporate disclosures may be less pronounced in SOEs, as the need to balance multiple objectives, including political and social goals, often leads to a more measured and cautious tone.

In contrast, non-SOEs typically operate with greater strategic flexibility and fewer bureaucratic constraints, placing a higher priority on innovation (Higgins, 2005). This allows military leaders in non-SOEs to more freely exercise their strategic vision and implement innovative approaches (Marquis & Tilcsik, 2013). The increased autonomy enables quicker decision-making and a more dynamic response to market conditions, fostering a proactive leadership style (Koch-Bayram & Wernicke, 2018). Additionally, non-SOE organizational cultures naturally align with key military leadership attributes such as teamwork and resilience (Zhang et al., 2022). The emphasis on collective effort and discipline in military training complements the collaborative and competitive environments of non-SOEs, empowering leaders

to drive performance and pursue strategic initiatives with confidence and agility. This culture encourages a more positive disclosure tone, reflecting the organization's confidence in its ability to innovate and succeed in a competitive market.

Based on the above discussion, we posit the following hypothesis:

H_2: *The relationship between the positive tone of corporate narrative disclosures and the presence of military-experienced leaders is strengthened within non-state-owned enterprises.*

4. Research Design

4.1 Sample Selection and Data Collection

Our initial sample includes all A-shares non-financial firms listed on the Shanghai and Shenzhen Stock Exchanges from 2010 to 2021, and we obtained the data from the China Stock Market and Accounting Research (CSMAR) database. The sample selection procedures and industry distribution are reported in Table 1. Table 1 presents the composition and selection process of our sample. We first keep all A-share observations that top executives' biographical information is available, accounting for 35,378 firm-year observations from 2010 through 2021. Then, following prior research (Luo et al., 2017; Zhang et al., 2022) we remove 738 firm-year observations representing financial and insurance industries (China Securities Regulatory Commission (CSRC) industry codes J66–J69) due to their different financial and regulatory structure. We also exclude 1,123 firm-year observations with special treatment (ST or *ST) tags as they reported losses of more than two years and face the risk of delisting. Finally, we drop 3,884 firm-year observations with missing necessary data for calculating the regression variables, ending up with a final sample of 29,633 firm-year observations[1].

Insert Table 1 here

Supplementary Appendix Table A2 provides a breakdown of executives with military experience samples by fiscal year. Among our sample, 1,251 observations (367 unique firms) have a CEO or a chairman with military experience, 721 observations (254 unique firms) have military-

[1] Supplementary Appendix Table A1 shows the sample's industry distribution, and industries are classified according to the CSRC guideline issued in 2012. As shown in Panel B of Table 1, manufacturing represents 66.87 per cent of the total observations, which is the largest sector. Other sectors vary from 6.49 per cent to just below 4 per cent.

experienced CEOs, and 985 observations (285 unique firms) have military-experienced board chairman. In general, Figure 1 shows an increasing trend in the existence of top executives with military experience over time.

Insert Figure 1 here

4.2 Research Models

Following previous studies (Luo et al., 2017; Martikainen et al., 2022; Quan et al., 2023), we estimate the following Generalized Least Squares (GLS) regression model to examine the association between the military experience of top executives and the disclosure tone.[2]

$$\begin{aligned} Tone_{i,t} = {} & \beta_0 + \beta_1 MilitaryLeaders_{i,t} + \beta_2 Size_{i,t} + \beta_3 Age_{i,t} + \beta_4 Lev_{i,t} + \beta_5 Current_{i,t} + \beta_6 Loss_{i,t} + \beta_7 ROA_{i,t} \\ & + \beta_8 SalesGrow_{i,t} + \beta_9 BTM_{i,t} + \beta_{10} Top10_{i,t} + \beta_{11} BoardSize_{i,t} + \beta_{12} BoardInd_{i,t} + \\ & \beta_{13} BoardDiv_{i,t} + \beta_{14} SuperSize_{i,t} + \beta_{15} Duality_{i,t} + \beta_{16} MagtOwner_{i,t} + \beta_{17} ConcOwner_{i,t} + \\ & \beta_{18} InstitOwner_{i,t} + IndustryFE_g + YearFE_t + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Subscripts i, t and g denote firm, year and industry, respectively. Where *Tone* is our dependent variable in our model. We employed the cutting-edge technique of Financial Bidirectional Encoder Representations from Transformers (FinBERT) to measure the tone of management discussion and analysis (MD&A) section of the annual report, a specialized language model tailored specifically for analyzing financial text data (Huang et al., 2023; Liu et al., 2023). This advanced tool offers a more sophisticated approach to sentiment analysis by incorporating contextual information, surpassing traditional models by considering the broader context in which words are used (Ranta et al., 2023). FinBERT is pre-trained on a vast corpus of financial documents, including annual reports, earnings calls, and press releases, providing it with a deep understanding of the industry. This extensive training ensures precise identification and analysis of differentiated concepts (Bochkay et al., 2023). Using its specialized capabilities, FinBERT enhances tone analysis accuracy in financial contexts, providing valuable insights for researchers and practitioners to inform decisions and strategies (Liu et al., 2023). To measure FinBERT, we utilized its NLP algorithm to determine the sentiment of annual reports[3]. The algorithm labels each

[2] We employ GLS models for the primary and additional tests, which correct for heteroscedasticity and autocorrelation across time and within firms. The results obtained using Ordinary Least Squares (OLS) regressions are highly similar. We sincerely thank the associate editor for recommending the use of GLS.

[3] We recognize that FinBERT was primarily trained on English financial texts, and we acknowledge that tone interpretation can differ across cultural and linguistic contexts. However, our study relies on the English-language

sentence as positive, negative, or neutral based on the highest predicted likelihood. We then define the sentiment of the annual report as the percentage of positive sentences minus the percentage of negative sentences[4].

Our independent variables capturing the military experience of top leaders include a group of variables, following Zhang et al. (2022) and Quan et al. (2023). Specifically, we use three proxies to measure *MilitaryLeaders as follows. MilitaryExecutives* is a dummy variable that equals 1 if the CEO or the chairman of the board of directors has served in the military, and 0 otherwise. *MilitaryCEO* is a dummy variable that equals 1 if the CEO has served in the military, and 0 otherwise. *MilitaryChairman* is a dummy variable that equals 1 if the chairman of the board of directors has served in the military, and 0 otherwise.

Following prior research, our regression model incorporates a set of control variables that capture firm characteristics, audit quality, and governance mechanisms that may influence disclosure tone and are also associated with the likelihood of appointing a military CEO or chair. We include firm size (*Size*) and firm age (*Age*), as larger and more established firms tend to provide richer disclosures and are more visible to stakeholders (Chang et al., 2023; Jha et al., 2024), while older firms are associated with more stable reporting behavior (Shan, 2019). Financial leverage (*Lev*) and the current ratio (*Current*) capture financial constraints that influence both managers' disclosure incentives and stakeholders' monitoring; for instance, Hao et al. (2023) show that leverage is strongly related to corporate communication, while liquidity shapes tone in stressed firms (Shan, 2019). Profitability (*ROA*) and reporting a loss (*Loss*) are also important, as firms with stronger or weaker performance have systematically different disclosure tones; For example, Jha et al. (2024) document that losses reduce readability, while Liu et al. (2023) find profitability moderates earnings quality in military executive settings. Sales growth (*SalesGrow*) is included

versions of the Management Discussion and Analysis (MD&A) sections, which are translated and provided by the CSMAR database. These translations are widely used in research and provide a consistent textual source for applying Western-trained sentiment analysis models. As of 2024, to the best of our knowledge, there is no publicly available FinBERT model specifically trained on Chinese financial disclosures, nor has any prior study introduced a robust Chinese-language deep-learning model that matches FinBERT's precision in sentiment classification. Given this limitation, we selected the English translations as the most feasible alternative to conduct our tone analysis.

[4] To further validate our tone measures, we compared FinBERT's assessments against human coders. This validation process involved a sample of MD&A sections being manually coded for tone by two researchers. The results were then compared to the outputs generated by FinBERT to ensure consistency and reliability. This comparative analysis boosts confidence in the constructs and ensures the robustness of our tone measurements.

because growth firms face greater investor scrutiny and disclosure demand (Chang et al., 2023), while the book-to-market ratio (*BTM*) proxies for valuation and maturity, both shown to influence disclosure incentives (Hao et al., 2023). To capture external monitoring, we control for Top 10 auditors (*Top10*), since higher-quality auditors constrain reporting discretion and reduce obfuscation, with prior studies documenting that Big 4 or top auditors are associated with more transparent reporting and improved tone (Shan, 2019; Koch-Bayram & Wernicke, 2018; Noureldeen et al., 2024).

Governance characteristics are also considered: board size (*BoardSize*) and independence (*BoardInd*) shape oversight of managers and disclosure quality, with Shan (2019) showing that independent directors increase voluntary disclosure while Koch-Bayram and Wernicke (2018) showing that board oversight strengthens the effect of ex-military CEOs in reducing misconduct. Board gender diversity (*BoardDiv*) is added because female directors are associated with greater transparency and stakeholder orientation (Chang et al., 2023), while CEO duality (*Duality*) captures the concentration of power, which has been found to weaken monitoring and disclosure credibility (Shan, 2019). Ownership structure is further accounted for, as managerial ownership (*MagtOwner*) and concentrated ownership (*ConcOwner*) proxy for insider and blockholder influence on disclosure practices (Hao et al., 2023), and institutional ownership (*InstitOwner*) can drive higher-quality disclosure and greater sensitivity to tone (Liu et al., 2023). Finally, we include industry (*IndustryFE*) and year fixed effects (*YearFE*) to capture unobservable heterogeneity across sectors and time, consistent with prior studies in this stream (Jha et al., 2024; Pavićević & Keil, 2024). To alleviate the outliers' values' impact, and following prior studies (Noureldeen et al., 2024; Quan et al., 2023; Zhang et al., 2022; Zhang et al., 2024), all continuous variables are winsorized at the 1st and 99th percentile. Detailed definitions of all variables are presented in Appendix A.

5. Empirical Results

5.1 Descriptive Statistics

Table 2 reports the descriptive statistics of the regression variables. Panel A of Table 2 shows the descriptive statistics on variables used in the main analysis. The mean (median) of *Tone* is 0.064 (0.044) and the maximum (minimum) is 0.75 (-0.194), suggesting that managers use a more positive tone in MD&A disclosures. With respect to our independent variables, the average value

of *MilitaryExecutives* is 0.042, indicating that 4.2% of our sample have military-experienced top executives. *MilitaryCEO* and *MilitaryChairman* have mean values of 0.024 and 0.033, implying that 2.4% and 3.3% of our sample have CEOs and chairmen who served in the military, respectively. These numbers are consistent and comparable with recent research using similar samples (Luo et al., 2017; Quan et al., 2023). The sample reveals mean values of *Size*, *Age*, and *ROA* are 22.098, 10.481, and 0.045 in a row. The numbers also show that over half of our sample firm-year observations are audited by *Top10* domestic audit firms. On average, the board of directors' size (*BoardSize*) is 9 members, and the proportion of independent directors (*BoardInd*) is 37.5 per cent. The mean values of *BoardDiv* and *SuperSize* are 0.15 and 3.504, suggesting that the proportion of females on the board of directors is 15%, and the supervisory board size is 4 members. The average value of *ConcOwner* is 0.540, implying that the ownership of Chinese firms is highly concentrated.

In addition, Panel B of Table 2 summarises the descriptive statistics of variables used in the additional analyses. For instance, the mean of *CEOAge* and *ChairmanAge* are 49.689 and 53.261, respectively. On average, *CEOTenure* and *ChairmanTenure* values are 4.40 and 5.40, indicating that the chairmen stay in their positions more than the CEOs by around a year.

Insert Table 2 here

Table 3 depicts Spearman's and Pearson's correlation coefficients among variables used in the main analysis. *Tone* is positively and significantly correlated with *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman.* This indicates a positive relationship between top executives' military experience and disclosure tone. The correlations between *Tone* and control variables such as *Size*, *ROA*, *Current, SalesGrow, Top10, BoardSize, Duality, MagtOwner, ConcOwner* and *InstitOwner* are positive. In contrast, *Tone* is negatively correlated with *Age*, *Lev*, *Loss*, and *BTM*.

Insert Table 3 here

5.2 Military Experience of Top Leaders and Disclosure Tone – H1

Table 4 presents the results for H1 relating to the military experience of top leaders and disclosure tone. For brevity, we only provide coefficients on our variables of interest,

MilitaryExecutives, *MilitaryCEO*, and *MilitaryChairman.* In terms of control variables, we observe that the coefficients are generally in line with previous research (Guo et al., 2020; Martikainen et al., 2022; Quan et al., 2023; Wu et al., 2021; Zhang et al., 2022). Statistically, as shown in Column (1), the coefficient on *MilitaryExecutives* is positive and significant ($\beta = 0.005$, $t = 3.178$, $p < 0.01$), suggesting that the MD&A section disclosure tone is often to be positive in firms that have a CEO or chairman person with military experience. Consistent with our prediction, Column (2) reports that the coefficient on *MilitaryCEO* is positive and significant ($\beta = 0.005$, $t = 2.595$, $p < 0.01$), indicating that firms with CEOs military-experienced tend to use a positive disclosure tone. Similarly, the coefficient on *MilitaryChairman* in Column (3) is positive and significant ($\beta = 0.004$, $t = 2.610$, $p < 0.01$), suggesting that the disclosure tone is often positive in firms that have military-experienced chairmen.[5] Regarding economic magnitude, our results show that firms with military experience—measured by *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman*—have coefficients of 0.005, 0.005, and 0.004, respectively on *Tone*[6]. This corresponds to approximate increases of 7.81, 7.81, and 6.25 per cent, respectively, relative to the average *Tone* value of 0.064. Hence, the findings support the acceptance of H1. Overall, these results indicate that the military experience of top leaders contributes to a systematically positive disclosure tone, emphasizing confidence and stability in corporate communication.

For our dependent variable, we additionally compute intra-class correlations (ICCs) to evaluate variations between CEOs or Chairmen in comparison to variations within-firm.[7] Our results show that the estimated variance is 0.00035 with an ICC of 0.221, suggesting that 22.1% of the total variance in our dependent variable, *Tone*, is due to differences between firms. In addition, for the CEOs and Chairman of the board, the variance is 0.0003 and 0.0004, with ICCs of 0.4494 and 0.4498, respectively. These results indicate that around 45% of the variance in *Tone* is attributed to differences between the CEOs or Chairman of the board within the same firm. Overall, these findings suggest that both firm and the CEOs (or Chairman) impact significantly on

[5] We re-estimate our primary regression models using clustered standard errors at the CEO level, chairman level, and at both (i.e., CEO and chairman) levels combined. The results remain consistent with those reported in the main regression, and we present them in the online supplement in Tables A14.

[6] To address potential concerns about model specification, we conducted additional robustness checks. Specifically, we re-estimated the key models (a) without any controls or fixed effects, (b) excluding fixed effects but retaining control variables, and (c) excluding governance factors (board size, independence, gender diversity, CEO duality, and ownership structures) and fixed effects. In all cases, the key results remained consistent. These supplementary analyses are reported in Table A15 of the online supplement.

[7] We thank the editor for suggesting this analysis.

the disclosure tone, and the impact attributed to CEOs (or Chairman) within firms is higher, suggesting that changes in CEOs (or Chairman) result in noticeable changes in the disclosure tone.

Insert Table 4 here

5.3 Military Experience of Top Executives and Disclosure Tone: The Moderating Role of State Ownership – H2

Table 5 presents the results for H2, which examines the moderating role of state ownership. In Column (2), when interacting CEOs' military background with state ownership, we find a negative and statistically significant coefficient on *SOE*MilitaryCEO* (β = -0.012, t = -2.202, $p <$ 0.05). This result indicates that the association between CEOs' military experience and the MD&A disclosure tone is stronger for non-SOEs. Economically, Tone decreases by approximately 18.75 per cent for SOE firms with a *MilitaryCEO*, relative to the average Tone value. In contrast, in Column (1), the coefficient on *SOE*MilitaryExecutives* is negative but statistically insignificant. Similarly, the coefficient on *SOE*MilitaryChairman* in Column (3) is also negative and insignificant. Overall, the results provide support for H2 at the CEO level, suggesting that the influence of military experience on disclosure tone is most salient—and substantively meaningful—in non-state-owned firms.

To facilitate interpretation, we use margins plots in STATA 16 to visualize the interaction effects reported in Table 5, as illustrated in Figure 2. Consistent with the regression estimates, Figure 2 shows that the association between military experience and MD&A disclosure tone varies systematically across ownership structures at the CEO level, with a more pronounced positive association observed in non-state-owned enterprises. This pattern suggests that organizational contexts characterized by greater managerial discretion, market orientation, and competitive pressures amplify the capacity of military-experienced CEOs to shape corporate communication. In contrast, the more bureaucratic and politically embedded environments of SOEs appear to dampen this relationship, limiting the extent to which leadership attributes translate into disclosure outcomes. Taken together, these results indicate that state ownership conditions the influence of military experience on disclosure tone, consistent with H2.

Insert Table 5 here

Insert Figure 2 here

While our results are statistically significant, the economic magnitude of military experience is relatively low. This finding aligns with prior research indicating that military experience has a measurable but modest impact on corporate outcomes. For instance, Benmelech and Frydman (2015) report that military background is negatively associated with corporate fraud, corporate investment, and earnings management, suggesting that while military experience shapes executive decision-making, its direct influence on firm-level outcomes is limited. Similarly, Li et al. (2024) find that military-experienced executives impact corporate earnings quality and firm value, though the economic effects remain relatively small. Given that disclosure tone is shaped by multiple organizational and market forces (Patelli & Pedrini, 2015; Huanget al., 2021), it is expected that individual executive characteristics contribute incrementally rather than overwhelmingly to corporate communication strategies. Nonetheless, our findings provide evidence that military experience systematically influences disclosure tone, even if the effect size is modest. Future research may explore additional contextual factors—such as industry regulations, political ties, and firm ownership structures—that could condition the strength of this relationship.

6. Additional Analysis and Robustness Checks

6.1 Alternative Measures of Top Executives' Military Experience and Disclosure Tone

One concern from capturing the military experience of top executives through a dummy variable is the potential divergent effects of dual military experience (Luo et al., 2017). To address the potential for dual military experience to have different effects, we replace our independent variable in Eq (1), *MilitaryExecutives* with *MilitaryExecutivesTotal*, which is a categorical variable that reflects the number of military executives running the firm. *MilitaryExecutivesTotal* takes a value of 2 if both the CEO and military chairman of the board of directors have a military background, takes a value of 1 if only one of them has a military background, and zero otherwise. Our results reported in Table 6 are similar to the main analysis results in Table 4, indicating that the military experience of top executives is positively associated with the disclosure tone. [8]

[8] As a robustness check, we use an alternative measure for disclosure tone, which is the proportion of the number of net positive words (number of positive words - number of negative words) to the total number of words in the management discussion and analysis (MD&A) section of the annual report (Shan, 2019; Wu et al., 2021). Our

Insert Table 6 here

For further understanding of the disclosure tone impacted by top executives with military experience, we do separate the tone of MD&A disclosures (*Tone*) into *positive, negative, and neutral* tones. The results reported in Table 7 suggest that top executives with military experience are more likely to increase the use of positive words rather than reduce the use of negative words in the MD&A section of the annual report.

Insert Table 7 here

6.2 Endogeneity

In the prior analysis, while the evidence indicates that the military experience of top executives leads managers to disclose information in a more positive tone, concerns remain regarding selection on observables and endogeneity due to selection on unobservable.[9]. To address such issues, we adopt several approaches, including propensity score matching (PSM), firm-fixed effect, and additional control variables.

6.3 Propensity Score Matching

To address the selection on observables issue, we use the PSM on the three main regression models that investigate H1 to account for the possibility that firms with particular characteristics may be more likely to appoint military-experienced executivesThe matching process commences with a Probit regression for variables of military experience of top executives, *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman* on control variables. We then use the estimated propensity score obtained from the first-stage model and match firms run by military-experienced top executives (i.e., treated group) with firms run by top executives without military experience (i.e., control group) using nearest neighbor match without replacement. We report our balancing tests for evaluating the quality of PSM tests in Tables A3, A4, and A5 of the supplementary Appendix.

unreported results are consistent with our previous results in Table 4, indicating that the military experience of top executives influences the disclosure tone.

[9] While many studies use Propensity Score Matching (PSM) to address endogeneity arising from unobserved factors (e.g., omitted variable bias), it is important to note that, like regression, PSM only accounts for observed variables. Therefore, both regression and PSM rely on the same identification strategy. However, unlike regression—which assumes a linear relationship between independent and dependent variables—PSM does not assume linearity. Instead, it relies on the assumption that the matching model is correctly specified. For more details, read Shang and Rönkkö (2022).

Our results using matched samples are presented in Table 8 and are similar to those in our main analysis in Table 4.[10]

Insert Table 8 here

6.4 Two-Stage Least Squares (2SLS) Technique

To mitigate endogeneity concerns, we employ the Two-Stage Least Squares (2SLS) statistical technique. Following previous research (e.g., Orazalin et al., 2024, Quan et al., 2023), we use one instrumental variable, *MilitaryArea*. Specifically, *MilitaryArea* captures the historical military presence in the province where a firm is headquartered. It is based on the number of military ranks conferred in 1955—the first year the Chinese military formally issued ranks. These ranks, listed from highest to lowest, include Marshal, Senior General, General, Lieutenant General, and Major General. We assign weights of 5, 4, 3, 2, and 1, respectively, to these ranks and sum them to construct the *MilitaryArea* score for each province. Then we divided the score by 100.[11] A higher value of *MilitaryArea* reflects a stronger local military prevalence, which we interpret as increasing the likelihood of residents entering military service and, consequently, the probability that firms in these areas have executives with military backgrounds (Quan et al., 2023).[12] Therefore, the use of the *MilitaryArea* is a relevant instrument and may reasonably satisfy the exclusion restriction.[13]

Our 2SLS results (Table 9) confirm that the effect remains positive and significant, supporting our main findings. [14].

Insert Table 9 here

[10] We further implement the PSM using machine learning techniques. The results, shown in Table A6 of the supplementary Appendix, are consistent with those of our main analyses.
[11] We thank an anonymous reviewer for suggesting the scaling of the *MilitaryArea* scores to improve readability.
[12] For the data see (in Chinese): https://zhuanlan.zhihu.com/p/562669724. (Accessed on May 17th, 2025).
[13] While we believe that the *MilitaryArea* is unlikely to directly influence *Tone*, firms located in areas with greater military presence may differ in unobservable ways that could also impact *Tone*. Therefore, the exclusion restriction of this instrumental variable should be interpreted with caution. We thank the reviewer for raising this point.
[14] To further deal with the possible self-selection bias, we utilize the Heckman two-stage approach. Results in supplementary Appendix Table A7, which documents the robustness of Table 4 after we have added *MilitaryArea* as instrumental variable in the first stage.

6.5 Firm Fixed Effects Approach

In order to control for firm-specific time-invariant unobservable effects that may drive our results, we instead do a firm fixed-effect model to mitigate unobserved heterogeneity that could influence both executive selection and disclosure tone. The results (Table 10) remain consistent with our main findings, suggesting that time-invariant omitted variables are unlikely to explain our results.

Insert Table 10 here

6.6 Additional Control Variables

As an attempt to address the problem of omitted variables that may arise in our analysis, we include a wide range of control variables. Precisely, we control for the CEO and chairman characteristics as well as audit committee attributes. In Column (1) of Table 11, we control for the characteristics of both CEOs and chairmen, namely, CEO gender (*CEOGender*), CEO age (*CEOAge*), CEO tenure (*CEOTenure*), CEO financial background (*CEOFin*), chairman gender (*ChairmanGender*), chairman age (*ChairmanAge*), chairman tenure (*ChairmanTenure*), and chairman financial background (*ChairmanFin*). In Columns (2) and (3) of Table 11, we control separately for CEOs and chairmen characteristics, respectively. Even after incorporating these additional controls, our results remain robust, indicating that the observed effects are not solely driven by omitted executive characteristics.

Insert Table 11 here

6.8 Fractional outcome regression analysis

As a robustness analysis, we employ fractional outcome regression models instead of traditional OLS regression.[15] This choice is justified by the nature of our dependent variable, which represents proportions. Fractional regression models, as suggested by Papke & Wooldridge (1996) and Villadsen & Wulff (2021), are more appropriate for analyzing proportion data. These models are designed to handle the specific characteristics of fractional dependent variables, ensuring more robust and reliable results.

[15] We thank an anonymous reviewer for suggesting this test.

Insert Table 12 here

Table 12 reports the estimates from the fractional outcome regression models examining the association between military experience among top executives and disclosure tone. In Column (1), the coefficient on *MilitaryExecutives* is positive and statistically significant at the 5% level, indicating that the presence of military-experienced executives is associated with a more constructive disclosure tone. In Columns (2) and (3), the coefficients for *MilitaryCEO* remain positive and directionally consistent, although estimated with less precision. Taken together, these results suggest a stable positive relationship between military experience in senior leadership and disclosure tone, with the fractional regression framework providing an appropriate and conservative test of the hypothesized effects.

7. Discussion

General discussion

While prior research has extensively examined the effects of corporate disclosure tone on firm strategic outcomes (Chang et al., 2023; Fu et al., 2021; Rogers et al., 2011; Patelli & Pedrini, 2015), there has been comparatively less emphasis on the role of corporate leadership attributes in shaping communication practices (Ormiston et al., 2022; Loughran & McDonald, 2016; Marquez Illescas et al., 2019). Therefore, this study seeks to illuminate the relationship between corporate leaders with military backgrounds and corporate disclosure tone, particularly within the unique context of China, where the military holds substantial cultural significance, and where political ideologies, cultural nuances, and state regulations intricately shape the landscape of corporate leadership and disclosure practices.

We explore this association by incorporating complementary theoretical perspectives from imprinting, upper echelons, and strategic leadership theories. Drawing on a dataset from Chinese non-financial firms, we argue that military experience will imprint a distinct set of values, skills, and traits, such as discipline, resilience, integrity, accountability, and strategic thinking, that will likely endure over time. As individuals with military backgrounds ascend to corporate leadership positions, these enduring attributes are expected to shape their assumptions, perceptions, vision, and sense of purpose that guide their leadership styles, decision-making processes, and disclosure tone outcomes. Our study finds that compared with non-military experienced leaders, military-experienced leaders are more inclined to utilize positive narrative disclosure tones. When

examining the moderating role of state ownership, we find that CEOs with military experience adopt significantly more positive disclosure tones when operating in non-state-owned enterprises.

Theoretical contributions

This research makes significant theoretical contributions. First, we broaden the conversation surrounding leaders' military experience by addressing its influence on corporate disclosure tone. While prior empirical studies have demonstrated a negative relation between military-experienced leaders and financial misconduct (Zhang et al., 2022), tax evasion (Law & Mills, 2017), and elevated ethical standards (Benmelech & Frydman, 2015), they have largely overlooked how these leaders shape corporate communication styles. Accordingly, our research extends the literature related to military-experienced leaders (Law & Mills, 2017; Wen et al., 2023; Xu et al., 2022; Zhang et al., 2022) to the context of corporate disclosure, providing a more systematic understanding of how leadership backgrounds influence corporate disclosure style. This contribution prompts scholars to explore how military experience affects not only what leaders do but how they communicate.

Second, we contribute to leadership literature by incorporating insights from upper echelons theory, strategic leadership theory, and imprinting theory to enhance our understanding of how leaders' military experiences shape their communication practices. Our results support the fundamental premise of upper echelons theory, which posits that executives' experiences and values significantly affect organizational outcomes (Hambrick and Mason, 1984). However, upper echelons theory does not fully account for how these experiences and values shape leaders' strategic vision; for that, strategic leadership theory offers a complementary perspective (Samimi et al., 2022). Despite these contributions, a key limitation of both leadership theories is their insufficient attention to the specific values that are imprinted during formative experiences. To address this gap, we draw on insights from imprinting theory (Stinchcombe, 1965), which underscores the lasting impact of critical early experiences on individuals' behaviors. By incorporating these frameworks, our study provides a deeper understanding of how military experience influences shapes executives' communication styles. Furthermore, this integration contributes by shifting the conversation in the literature from a generalized understanding of leadership to a more rigorous exploration of how military experiences specifically influence leaders' strategic vision and communication practices. Additionally, it prompts further investigation into the particular values instilled during military service and how these shape not

only individual behaviors but also organizational outcomes. Consequently, our findings invite a reevaluation of existing leadership theories and underscore the importance of examining the deeper connections between leaders' backgrounds and their strategic approaches in a corporate context.

Finally, our study significantly contributes to the narrative disclosure tone literature by identifying military experience as a previously overlooked antecedent of tone variation. While prior research has examined various factors influencing narrative tone (Chang et al., 2023; Fu et al., 2021; Rogers et al., 2011; Patelli & Pedrini, 2015), the role of leaders' values has largely gone unexplored. By demonstrating how military-experienced executives infuse their unique values into corporate disclosures, we enhance our understanding of the factors driving variations in communication styles among firms. This focus on military experience not only sheds light on how specific leadership backgrounds shape narrative tone but also opens new avenues for investigating other background factors that may similarly influence corporate communication. Consequently, our findings encourage a broader exploration of the relationship between leadership characteristics and narrative disclosure, thereby enriching both corporate communication and leadership research.

Furthermore, by examining the role of corporate ownership in strengthening the effect of military-imprinted values on corporate disclosure tone, we offer a novel perspective that sheds light on how institutional contexts interact with leadership characteristics to influence communication strategies. In particular, we show that the bureaucratic nature of SOEs in China may limit the influence of military leaders' values, while non-SOEs, with their more flexible environments, allow these values to have a stronger impact. This highlights key boundary conditions for the effects of military experience on corporate disclosures, illustrating how different ownership structures can either constrain or amplify the expression of military-imprinted leadership traits. In doing so, our study expands the understanding of how contextual factors, like ownership structures, interact with imprinted values to shape corporate communication strategies.

Practical implications

Our study has several practical implications. First, our findings support the notion that leaders' military imprints significantly influence communication strategies. Specifically, military-experienced leaders tend to employ a more positive disclosure tone compared to their non-military counterparts. This insight is especially relevant within China's unique socio-cultural and political milieu, where values of national pride and unity are highly valued. Understanding and leveraging

the influence of military experience on communication strategies can be particularly advantageous for corporate leaders operating in this context. For instance, by emphasizing positive and strategic narratives, military-experienced leaders can align their communication with national values and expectations, thus fostering stronger connections with stakeholders.

Second, our findings indicate that the values held by military-experienced leaders inherently evoke profound patriotic sentiments due to their intrinsic association with national defense and service to the country. This communication approach has the potential to elicit feelings of admiration and loyalty among employees, investors, and the general public. By emphasizing these values in their communication strategies, corporate leaders can foster a sense of pride and unity, reinforcing the company's role as a valuable contributor to the nation's well-being. This not only inspires solidarity and support within the organization but also enhances the company's reputation and brand image in the broader market. By doing so, leaders can evoke a sense of national pride and unity among employees, fostering a strong sense of camaraderie and shared purpose within the organization.

Third, for Chinese companies, hiring military-experienced leaders can fortify the company's brand image and corporate reputation within the Chinese market by fostering a sense of authenticity and credibility. These leaders bring a wealth of experience, discipline, and strategic thinking cultivated through their military background, which resonates positively with stakeholders. Additionally, their association with national defense and service to the country imbues the company with a sense of patriotism and commitment to societal well-being, further enhancing its reputation as a trustworthy and reputable entity. This alignment with deeply ingrained cultural values and societal expectations strengthens the company's position in the market and contributes to its long-term success and resilience.

Fourth, companies can consider using military experience as a criterion when screening candidates for top positions. By doing so, companies may identify individuals who possess the qualities necessary for effective leadership within the organization's socio-cultural and political landscape. Military-experienced leaders are likely to bring attributes such as strategic acumen, resilience, and a commitment to ethical behavior, all of which are beneficial for corporate governance and overall organizational performance.

By integrating these insights, corporate leaders can enhance their strategic communication, foster stronger stakeholder relationships, and ultimately drive organizational success in a competitive and dynamic business environment.

Limitations and future research

This research identifies several limitations that merit attention in future studies. Firstly, we posit that military experience imprints certain values such as courage, resilience, quick decision-making under pressure, and teamwork. We utilize this premise to elucidate the mechanism connecting military-experienced leaders with corporate narrative disclosure tone. However, we do not directly assess these imprinted characteristics. Therefore, we encourage future scholars to measure these imprinted attributes for a more comprehensive understanding of their influence on communication strategies. Second, our study offers insights into the relationship between military experience and corporate communication tone within the unique context of China. Future research is encouraged to further explore this association across different countries or regions, as different cultural, political, and regulatory environments may influence the manifestation of this relationship. Comparative studies could provide valuable insights into how the impact of military experience on communication tone varies across diverse cultural contexts. Third, we discuss that the positive association between military-experienced leaders and positive disclosure tone is moderated by state ownership. While our study provides initial insights into the potential synergy between military experience and environmental strategies within non-SOEs, the generalizability of these findings to different sectors and organizational settings remains to be confirmed. Additionally, future research should consider the influence of contextual factors such as industry competitiveness, market dynamics, and regulatory frameworks on this relationship.

Fourth, the missing data rate is a potential limitation in our study, as it exceeds ten percent of our total initial sample. This level of missingness may bias model estimates and lead to inaccurate standard errors (Wulff et al., 2023).

Finally, due to limited data availability to directly measure the moderating effects of certain variables influencing the imprinting process and other individual differences, such as personality traits, we encountered challenges in demonstrating significant moderating effects of the duration and rank of military-experienced leaders on corporate disclosure tone. Despite efforts to account for these factors, their precise influence on communication tone remains uncertain. Moving forward, it is imperative for future research to address these data limitations by employing

more comprehensive datasets or alternative methodologies to capture the nuanced dynamics at play. Additionally, exploring additional moderators and refining measurement techniques could provide a more robust understanding of how military experience intersects with leadership characteristics to shape communication strategies.

8. Conclusion

In this study, we extend imprinting theory within the leadership literature and integrate it with upper echelons and strategic leadership theories to examine the impact of executives' military backgrounds on corporate disclosure tone in China. Our findings reveal a positive association between military-experienced executives and firm positive disclosure tone, indicating that the values and skills acquired during military service, such as teamwork, resilience and sense of purpose significantly shape corporate communication strategies. Notably, this effect is particularly pronounced in non-SOEs, where the market-driven ethos and emphasis on innovation and competitiveness align well with the attributes of military-experienced leaders. This observation underscores the importance of organizational context in moderating the influence of executive backgrounds on disclosure practices. The distinct bureaucratic and regulatory environment of SOEs may attenuate the impact of military experience on disclosure tone, highlighting the necessity for adaptable leadership approaches within different organizational settings. Our results contribute valuable evidence to the burgeoning literature on imprinting theory by demonstrating the enduring impact of early life experiences, such as military service, on leadership behavior and communication styles. Additionally, our study enriches the understanding of how military experience influences corporate communication, providing insights into the narrative frameworks shaped by these leaders. Furthermore, our research elucidates the determinants of firm disclosure tone, emphasizing the role of executive backgrounds in crafting corporate narratives.

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Appendix A: Variable Definitions

Variable Name		Definition
Dependent Variables		
Tone	=	(Number of positive sentences according to NLP algorithm - number of negative sentences according to NLP algorithm) / total number of sentences in MD&A section
Positive	=	Natural logarithm of the total number of positive sentences in MD&A section plus one according to NLP algorithm
Negative	=	Natural logarithm of the total number of negative sentences in MD&A section plus one according to NLP algorithm
Neutral	=	Natural logarithm of the total number of neutral sentences in MD&A section plus one according to NLP algorithm
Independent Variables		
MilitaryExecutives	=	A dummy variable that equals 1 if the CEO or the chairman of the board of directors has served in the military, and 0 otherwise
MilitaryCEO	=	A dummy variable that equals 1 if the CEO has served in the military, and 0 otherwise
MilitaryChairman	=	A dummy variable that equals 1 if the chairman of the board of directors has served in the military, and 0 otherwise
MilitaryExecutivesTotal	=	The number of military executives who manage a firm takes a value of 2 if both the CEO and military chairman of the board of directors have a military background, takes a value of 1 if only one of them has a military background, and zero otherwise.
Moderating Variable		
SOE	=	A dummy variable that equals 1 if a firm is a state-owned enterprise (SOE) and 0 otherwise
Control Variables		
Size	=	Natural logarithm of the firm's total assets
Age	=	Number of years that the firm has been listed
Lev	=	Total liabilities divided by total assets
Current	=	The ratio of total current assets divided by total current liabilities
Loss	=	A dummy variable that equals 1 if the firm's net income is negative, and 0 otherwise.
ROA	=	Net income divided by total assets
SalesGrow	=	The growth rate of sales from the prior year to the current year
BTM	=	The book value of equity divided by the market value of equity
Top10	=	A dummy variable that equals 1 if a firm is audited by a domestic Top 10 audit firm, and 0 otherwise
BoardSize	=	The total number of directors on the board of directors
BoardInd	=	The proportion of independent directors on the board of directors
BoardDiv	=	The proportion of female directors on the board of directors
SuperSize	=	The total number of supervisors on the supervisory board
Duality	=	A dummy variable that equals 1 if the CEO is the chairman of the board of directors, and 0 otherwise
MagtOwner	=	The proportion of shares held by directors, supervisors, and executives divided by total shares
ConcOwner	=	The shareholding ratio of the top five shareholders
InstitOwner	=	The proportion of shares held by institutional investors divided by the total shares
CEOGender	=	A dummy variable that equals 1 if the CEO is a female and 0 otherwise.
CEOAge	=	The age of the CEO
CEOTenure	=	The number of years that the CEO has assumed the position
CEOFin	=	A dummy variable that equals 1 if CEO has a financial background, and 0 otherwise
ChairmanGender	=	A dummy variable that equals 1 if the chairman of the board of directors is a female, and 0 otherwise
ChairmanAge	=	The age of the chairman of the board of directors
ChairmanTenure	=	The number of years that the chairman of the board of directors has assumed the position
ChairmanFin	=	A dummy variable that equals 1 if the chairman of the board of directors has a financial background, and 0 otherwise
Industry FE	=	Industry fixed effects indicator variables
Year FE	=	Year fixed effects indicator variables
Instrumental Variable		
MilitaryArea	=	The number of military ranks awarded in the province where the company headquarters is located divided by 100

Tables

Table 1: Sample selection and industry distribution

Panel A: Sample Selection	
Firm observations of A-share firms on CSMAR from 2010-2021	35,378
Less:	
Observations representing the financial and insurance industries	(738)
Observations representing ST and *ST	(1,123)
Observations with missing data	(3,884)
Final Sample firm-years	29,633

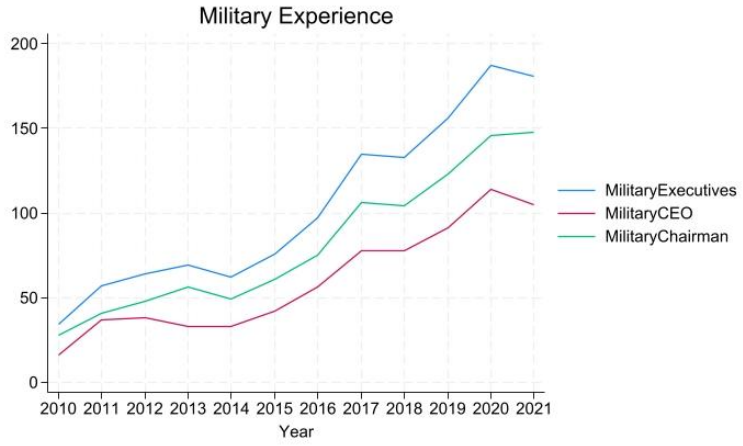

Figure 1: Military executives over the last decade

Table 2: Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Median	Max
Panel A: Variables used in baseline regressions						
Tone	29,633	0.064	0.044	-0.194	0.060	0.750
MilitaryExecutives	29,633	0.042	0.201	0.000	0.000	1.000
MilitaryCEO	29,633	0.024	0.154	0.000	0.000	1.000
MilitaryChairman	29,633	0.033	0.179	0.000	0.000	1.000
Size	29,633	22.098	1.248	19.876	21.919	25.996
Age	29,633	10.481	7.536	1.000	9.000	32.000
Lev	29,633	0.413	0.207	0.050	0.403	0.891
Current	29,633	2.674	2.836	0.322	1.734	18.012
Loss	29,633	0.097	0.295	0.000	0.000	1.000
ROA	29,633	0.045	0.063	-0.225	0.043	0.221
SalesGrow	29,633	0.183	0.394	-0.542	0.120	2.439
BTM	29,633	0.613	0.242	0.116	0.614	1.155
Top10	29,633	0.569	0.495	0.000	1.000	1.000
BoardSize	29,633	8.539	1.681	4.000	9.000	18.000
BoardInd	29,633	0.375	0.052	0.333	0.333	0.571
BoardDiv	29,633	0.150	0.131	0.000	0.125	0.556
SuperSize	29,633	3.504	1.040	1.000	3.000	15.000
Duality	29,633	0.297	0.457	0.000	0.000	1.000
MagtOwner	29,633	0.148	0.205	0.000	0.010	0.690
ConcOwner	29,633	0.540	0.152	0.205	0.542	0.877
InstitOwner	29,633	0.427	0.247	0.003	0.444	0.901
SOE	29,633	0.101	0.302	0.000	0.000	1.000
Panel B: Additional variables used in additional analyses						
MilitaryExecutivesTotal	29,633	0.058	0.291	0.000	0.000	2.000
Positive	29,633	4.069	0.533	0.000	4.094	6.140
Negative	29,633	2.937	0.637	0.000	2.996	5.130
Neutral	29,633	6.347	0.449	0.693	6.353	9.267
MilitaryArea	29,633	0.580	0.834	0.000	0.180	3.690
CEOGender	29,633	0.067	0.250	0.000	0.000	1.000
CEOAge	29,633	49.689	6.737	25.000	50.000	81.000
CEOTenure	29,633	4.400	3.258	0.000	4.000	21.000
CEOFin	29,633	0.054	0.226	0.000	0.000	1.000
ChairmanGender	29,633	0.052	0.223	0.000	0.000	1.000
ChairmanAge	29,633	53.261	7.338	24.000	53.000	85.000
ChairmanTenure	29,633	5.391	3.743	0.000	5.000	24.000
ChairmanFin	29,633	0.082	0.274	0.000	0.000	1.000

***Notes*:** All continuous variables are winsorized at 1% on both tails. Variable definitions are provided in Appendix A.

Table 3: Correlation matrices

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
(1) Tone	1.00	**0.03**	**0.02**	**0.03**	0.01	0.00	0.00	0.00	**0.66**	**-0.25**	**-0.10**	**0.03**	**-0.12**	**-0.07**	**0.10**	**-0.21**	**0.29**	**0.31**	**-0.06**	**0.03**	0.01	0.01	0.01	**-0.01**	**0.04**	**0.10**	**0.08**	**0.04**
(2) MilitaryExecutives	**0.03**	1.00	**0.75**	**0.88**	**-0.03**	**0.24**	**0.19**	**0.18**	**0.05**	0.00	**0.05**	**-0.04**	**-0.08**	**-0.03**	**0.03**	0.00	**0.02**	**0.02**	**-0.03**	0.00	**-0.02**	0.01	**0.01**	**-0.05**	0.00	**0.08**	0.00	**-0.05**
(3) MilitaryCEO	**0.02**	**0.75**	1.00	**0.53**	**-0.02**	**0.19**	**0.25**	**0.08**	**0.03**	-0.01	**0.02**	**-0.04**	**-0.07**	**-0.02**	**0.02**	0.00	**0.02**	**0.01**	**-0.03**	0.00	**-0.04**	**0.02**	**0.02**	**-0.04**	**0.08**	**0.07**	0.00	**-0.05**
(4) MilitaryChairman	**0.03**	**0.88**	**0.53**	1.00	**-0.04**	**0.16**	**0.06**	**0.21**	**0.04**	0.00	**0.04**	**-0.03**	**-0.07**	**-0.02**	**0.03**	0.00	**0.03**	**0.02**	**-0.03**	0.00	**-0.03**	0.00	**0.02**	**-0.05**	**0.04**	**0.08**	0.00	**-0.05**
(5) SOE	**0.01**	**-0.03**	**-0.02**	**-0.04**	1.00	**0.15**	**0.12**	**0.12**	**-0.02**	**-0.03**	**-0.03**	**0.19**	**0.14**	**0.14**	**-0.13**	**-0.02**	**-0.05**	0.01	**0.16**	0.00	**0.18**	**-0.05**	**-0.11**	**0.24**	**-0.15**	**-0.28**	**0.09**	**0.27**
*(6) MilitaryExecutives*SOE*	0.00	**0.24**	**0.19**	**0.16**	**0.15**	1.00	**0.78**	**0.77**	0.01	0.01	0.01	0.01	**-0.01**	**0.01**	-0.01	-0.01	0.01	0.00	**0.01**	-0.01	**0.03**	**-0.02**	-0.01	**0.03**	**-0.02**	**-0.04**	**0.03**	**0.05**
*(7) MilitaryCEO*SOE*	-0.01	**0.19**	**0.25**	**0.06**	**0.12**	**0.78**	1.00	**0.33**	0.01	0.01	0.01	**0.01**	**-0.01**	**0.02**	**-0.01**	0.00	0.00	0.00	**0.02**	**-0.01**	**0.03**	-0.01	**0.00**	**0.03**	**-0.01**	**-0.03**	**0.02**	**0.04**
*(8) MilitaryChairman*SOE*	0.00	**0.18**	**0.08**	**0.21**	**0.12**	**0.77**	**0.33**	1.00	0.00	0.00	0.01	0.00	-0.01	**0.01**	-0.01	-0.01	**0.01**	0.00	0.00	-0.01	**0.02**	**-0.02**	0.00	**0.01**	**-0.01**	**-0.03**	**0.02**	**0.04**
(9) Positive	**0.60**	**0.05**	**0.03**	**0.05**	**-0.02**	0.01	0.01	0.00	1.00	**0.37**	**0.50**	**0.12**	**-0.14**	**-0.05**	**0.06**	**-0.11**	**0.16**	**0.21**	**0.04**	**0.05**	0.00	**0.02**	**0.01**	**-0.03**	**0.07**	**0.15**	**0.09**	**0.02**
(10) Negative	**-0.26**	0.00	0.00	0.00	**-0.02**	0.01	0.01	0.00	**0.38**	1.00	**0.34**	**0.04**	**-0.01**	**0.02**	**-0.04**	**0.16**	**-0.19**	**-0.23**	**0.11**	**0.02**	0.00	0.01	0.00	**0.01**	**0.02**	**-0.01**	**0.03**	0.00
(11) Neutral	**-0.21**	**0.04**	**0.03**	**0.04**	**-0.03**	0.01	**0.01**	0.00	**0.48**	**0.36**	1.00	**0.18**	**-0.06**	**0.03**	**-0.01**	**-0.02**	**0.00**	**0.11**	**0.10**	**0.04**	-0.01	**0.02**	0.01	**-0.04**	**0.06**	**0.17**	-0.01	**-0.06**
(12) Size	**0.06**	**-0.03**	**-0.04**	**-0.03**	**0.20**	0.01	**0.02**	0.00	**0.14**	**0.05**	**0.15**	1.00	**0.48**	**0.53**	**-0.47**	**-0.03**	**-0.12**	**0.03**	**0.50**	**0.07**	**0.24**	**-0.04**	**-0.12**	**0.26**	**-0.20**	**-0.32**	**0.03**	**0.39**
(13) Age	**-0.09**	**-0.08**	**-0.07**	**-0.08**	**0.15**	-0.01	**-0.01**	-0.01	**-0.14**	0.00	**-0.08**	**0.44**	1.00	**0.42**	**-0.42**	**0.14**	**-0.35**	**-0.16**	**0.14**	**-0.05**	**0.16**	**-0.04**	**-0.10**	**0.29**	**-0.27**	**-0.58**	**-0.35**	**0.23**
(14) Lev	**-0.06**	**-0.02**	**-0.02**	**-0.02**	**0.14**	**0.02**	**0.02**	**0.01**	**-0.05**	**0.02**	**0.02**	**0.53**	**0.39**	1.00	**-0.83**	**0.18**	**-0.45**	0.00	**0.35**	0.00	**0.15**	**-0.02**	**-0.10**	**0.22**	**-0.16**	**-0.33**	**-0.12**	**0.20**
(15) Curr	**0.04**	**0.03**	**0.03**	**0.02**	**-0.09**	**-0.01**	-0.01	**-0.01**	**0.04**	**-0.01**	**-0.02**	**-0.36**	**-0.31**	**-0.65**	1.00	**-0.19**	**0.43**	**0.04**	**-0.29**	**0.01**	**-0.16**	**0.03**	**0.08**	**-0.24**	**0.17**	**0.34**	**0.13**	**-0.19**
(16) Loss	**-0.20**	0.00	0.00	0.00	**-0.02**	-0.01	0.00	-0.01	**-0.13**	**0.16**	**-0.02**	**-0.04**	**0.12**	**0.20**	**-0.11**	1.00	**-0.51**	**-0.25**	0.00	**-0.03**	**-0.03**	**0.02**	0.00	0.01	**-0.01**	**-0.09**	**-0.16**	**-0.07**
(17) ROA	**0.26**	**0.01**	0.01	**0.02**	**-0.03**	0.00	-0.01	0.01	**0.16**	**-0.20**	0.01	**-0.05**	**-0.24**	**-0.41**	**0.27**	**-0.65**	1.00	**0.34**	**-0.26**	**0.06**	**-0.03**	-0.01	**0.05**	**-0.11**	**0.10**	**0.27**	**0.27**	**0.05**
(18) SalesGrow	**0.18**	0.01	0.00	0.01	**0.03**	0.00	0.00	0.00	**0.13**	**-0.16**	**0.06**	**0.04**	**-0.07**	**0.03**	**-0.03**	**-0.18**	**0.25**	1.00	**-0.09**	**0.01**	**-0.02**	0.01	0.00	**-0.06**	**0.05**	**0.13**	**0.07**	**0.02**
(19) BTM	**-0.05**	**-0.04**	**-0.03**	**-0.03**	**0.16**	0.01	**0.02**	0.00	**0.05**	**0.11**	**0.11**	**0.53**	**0.18**	**0.35**	**-0.20**	0.00	**-0.20**	**-0.06**	1.00	**0.01**	**0.15**	**-0.04**	**-0.07**	**0.17**	**-0.11**	**-0.14**	**0.12**	**0.14**
(20) Top10	**0.02**	0.00	0.00	0.00	0.00	-0.01	**-0.01**	-0.01	**0.05**	**0.02**	**0.03**	**0.10**	**-0.04**	0.00	0.00	**-0.03**	**0.06**	0.00	**0.02**	1.00	0.00	**0.01**	**0.01**	**-0.01**	**0.03**	**0.05**	**0.09**	**0.05**
(21) BoardSize	**0.01**	**-0.03**	**-0.03**	**-0.03**	**0.19**	**0.03**	**0.03**	**0.02**	0.01	0.00	0.00	**0.27**	**0.17**	**0.16**	**-0.13**	**-0.02**	**-0.01**	**-0.02**	**0.16**	0.01	1.00	**-0.60**	**-0.13**	**0.30**	**-0.20**	**-0.20**	**-0.03**	**0.22**
(22) BoardInd	0.01	0.01	**0.02**	0.00	**-0.05**	**-0.02**	**-0.01**	**-0.02**	**0.01**	0.00	0.00	**-0.01**	**-0.04**	**-0.01**	**0.02**	**0.02**	**-0.01**	0.00	**-0.04**	**0.01**	**-0.50**	1.00	**0.05**	**-0.10**	**0.12**	**0.07**	**0.05**	**-0.08**
(23) BoardDiv	0.01	**0.02**	**0.02**	**0.02**	**-0.10**	0.00	0.00	0.00	**0.01**	0.00	0.00	**-0.12**	**-0.09**	**-0.09**	**0.06**	0.00	**0.03**	0.00	**-0.06**	**0.02**	**-0.11**	**0.03**	1.00	**-0.12**	**0.12**	**0.15**	**0.01**	**-0.12**
(24) SuperSize	-0.01	**-0.05**	**-0.04**	**-0.04**	**0.24**	**0.02**	**0.03**	**0.01**	**-0.02**	**0.02**	**-0.03**	**0.28**	**0.27**	**0.21**	**-0.15**	0.01	**-0.06**	**-0.04**	**0.18**	-0.01	**0.34**	**-0.11**	**-0.11**	1.00	**-0.19**	**-0.32**	**-0.02**	**0.25**
(25) Duality	**0.03**	0.00	**0.08**	**0.04**	**-0.15**	**-0.02**	**-0.01**	**-0.01**	**0.07**	**0.02**	**0.05**	**-0.20**	**-0.26**	**-0.16**	**0.15**	**-0.01**	**0.06**	**0.03**	**-0.12**	**0.03**	**-0.19**	**0.12**	**0.12**	**-0.18**	1.00	**0.28**	**0.05**	**-0.20**
(26) MagtOwner	**0.06**	**0.07**	**0.06**	**0.06**	**-0.23**	**-0.03**	**-0.03**	**-0.03**	**0.12**	**-0.01**	**0.10**	**-0.36**	**-0.56**	**-0.34**	**0.30**	**-0.09**	**0.21**	**0.06**	**-0.11**	**0.03**	**-0.21**	**0.08**	**0.13**	**-0.27**	**0.26**	1.00	**0.07**	**-0.63**
(27) ConcOwner	**0.08**	0.00	0.00	0.00	**0.10**	**0.03**	**0.02**	**0.02**	**0.10**	**0.03**	**0.02**	**0.10**	**-0.30**	**-0.11**	**0.13**	**-0.15**	**0.25**	**0.06**	**0.13**	**0.10**	-0.01	**0.05**	0.01	0.00	**0.04**	**0.18**	1.00	**0.46**
(28) InstitOwner	**0.05**	**-0.05**	**-0.05**	**-0.05**	**0.27**	**0.05**	**0.04**	**0.04**	**0.01**	**0.00**	**-0.05**	**0.42**	**0.25**	**0.21**	**-0.15**	**-0.07**	**0.07**	**0.03**	**0.14**	**0.04**	**0.23**	**-0.08**	**-0.11**	**0.25**	**-0.20**	**-0.66**	**0.46**	1.00

Notes: The upper triangle reports the Spearman correlation matrix, while the lower triangle reports the Pearson correlation matrix. Bold numbers indicate significance based on two-tailed t-tests, at the 0.10 level at least. Due to formatting constraints, asterisks were not used. Given that the dataset contains repeated firm-level observations, these significance levels should be interpreted with caution, as they do not account for within-firm clustering. The correlations are presented for descriptive purposes only.All continuous variables are winsorized at 1% and 99% level. Variable definitions are provided in Appendix A.

Table 4: Military experience of top executives and disclosure tone

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.005**		
	(3.178)		
MilitaryCEO		0.005**	
		(2.595)	
MilitaryChairman			0.004**
			(2.610)
Size	0.004***	0.004***	0.004***
	(6.947)	(6.977)	(6.952)
Age	-0.000***	-0.000***	-0.000***
	(-3.416)	(-3.474)	(-3.445)
Lev	0.004	0.004	0.004
	(1.457)	(1.451)	(1.478)
Current	-0.000	-0.000	-0.000
	(-1.039)	(-1.055)	(-1.000)
Loss	-0.007***	-0.007***	-0.007***
	(-7.429)	(-7.448)	(-7.427)
ROA	0.107***	0.107***	0.107***
	(16.976)	(16.959)	(16.974)
SalesGrow	0.010***	0.010***	0.010***
	(16.428)	(16.433)	(16.435)
BTM	-0.008***	-0.008***	-0.008***
	(-4.125)	(-4.152)	(-4.139)
Top10	-0.000	-0.000	-0.000
	(-0.534)	(-0.533)	(-0.542)
BoardSize	0.000	0.000	0.000
	(1.465)	(1.468)	(1.475)
BoardInd	0.010	0.010	0.010
	(1.293)	(1.285)	(1.297)
BoardDiv	-0.001	-0.001	-0.001
	(-0.456)	(-0.446)	(-0.459)
SuperSize	-0.000	-0.000	-0.000
	(-0.287)	(-0.315)	(-0.294)
Duality	0.000	0.000	0.000
	(0.261)	(0.050)	(0.155)
MagtOwner	0.014***	0.014***	0.014***
	(4.485)	(4.508)	(4.497)
ConcOwner	-0.007†	-0.007†	-0.007†
	(-1.794)	(-1.809)	(-1.804)
InstitOwner	0.016***	0.016***	0.016***
	(5.557)	(5.550)	(5.566)
Intercept	-0.035**	-0.035**	-0.035**
	(-2.787)	(-2.792)	(-2.786)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
OLS Adj. R^2	0.199	0.199	0.199

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 5: Moderating impact of state ownership on the military experience of top executives and disclosure tone

Variables	(1) Tone	(2) Tone	(3) Tone
SOE	-0.001	-0.001	-0.001
	(-0.641)	(-0.613)	(-0.771)
MilitaryExecutives	0.005***		
	(3.357)		
MilitaryCEO		0.005**	
		(3.002)	
MilitaryChairman			0.004**
			(2.587)
*SOE*MilitaryExecutives*	-0.005		
	(-1.125)		
*SOE*MilitaryCEO*		-0.012*	
		(-2.202)	
*SOE*MilitaryChairman*			-0.000
			(-0.023)
Size	0.004***	0.004***	0.004***
	(6.946)	(6.986)	(6.966)
Age	-0.000***	-0.000***	-0.000***
	(-3.422)	(-3.494)	(-3.451)
Lev	0.004	0.004	0.004
	(1.447)	(1.440)	(1.458)
Current	-0.000	-0.000	-0.000
	(-1.054)	(-1.070)	(-1.013)
Loss	-0.007***	-0.007***	-0.007***
	(-7.424)	(-7.447)	(-7.425)
ROA	0.107***	0.107***	0.107***
	(16.984)	(16.952)	(16.968)
SalesGrow	0.010***	0.010***	0.010***
	(16.478)	(16.495)	(16.491)
BTM	-0.008***	-0.008***	-0.008***
	(-4.074)	(-4.098)	(-4.100)
Top10	-0.000	-0.000	-0.000
	(-0.548)	(-0.558)	(-0.549)
BoardSize	0.000	0.000	0.000
	(1.480)	(1.487)	(1.492)
BoardInd	0.010	0.010	0.010
	(1.287)	(1.287)	(1.292)
BoardDiv	-0.001	-0.001	-0.001
	(-0.466)	(-0.454)	(-0.472)
SuperSize	-0.000	-0.000	-0.000
	(-0.236)	(-0.266)	(-0.245)
Duality	0.000	0.000	0.000
	(0.244)	(0.011)	(0.134)
MagtOwner	0.014***	0.014***	0.014***
	(4.435)	(4.459)	(4.457)
ConcOwner	-0.007†	-0.007†	-0.007†
	(-1.761)	(-1.783)	(-1.775)
InstitOwner	0.016***	0.016***	0.016***
	(5.612)	(5.610)	(5.614)
Intercept	-0.035**	-0.035**	-0.035**
	(-2.798)	(-2.811)	(-2.808)

Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
OLS Adj. R^2	0.199	0.199	0.199

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

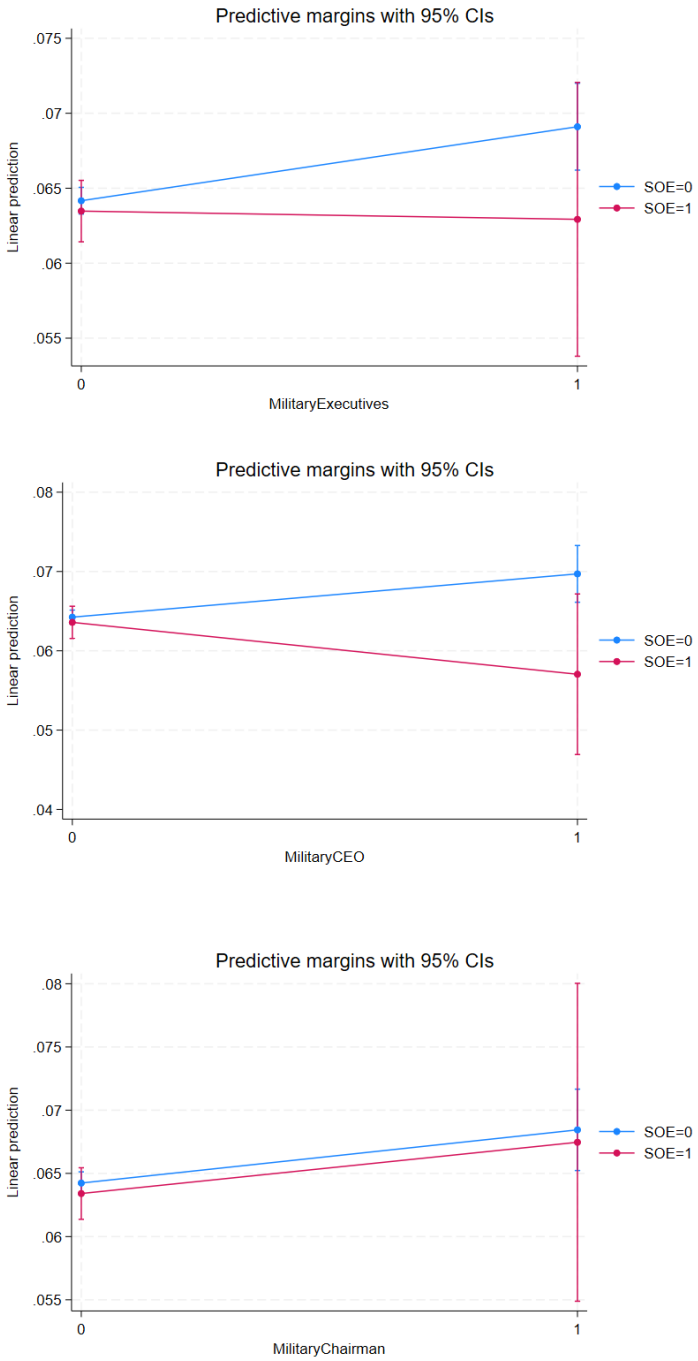

Figure 2: Interaction effects of state ownership and the military experience of top executives on disclosure tone.

Table 6: Military experience of top executives using an alternative measure and disclosure tone

Variables	(1) Tone
MilitaryExecutivesTotal	0.003**
	(3.124)
Control variables	Included
Year FE	Yes
Industry FE	Yes
Observations	29,633
OLS Adj. R^2	0.199

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 7: Military experience of top executives and positive and negative tone

Variables	(1) Positive	(2) Negative	(3) Neutral	(4) Positive	(5) Negative	(6) Neutral	(7) Positive	(8) Negative	(9) Neutral
MilitaryExecutives	0.048**	-0.014	-0.005*						
	(3.134)	(-0.625)	(-2.296)						
MilitaryCEO				0.042*	-0.019	-0.003			
				(2.100)	(-0.692)	(-1.219)			
MilitaryChairman							0.043*	-0.018	-0.005†
							(2.494)	(-0.696)	(-1.837)
Control variables	Included	Included	Included	Included	Included	Included	Included	Included	Included
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633
OLS Adj. R^2	0.458	0.289	0.985	0.458	0.289	0.985	0.458	0.289	0.985

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 8: Military experience of top executives and disclosure tone using the PSM approach

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.004*		
	(2.367)		
MilitaryCEO		0.006*	
		(2.494)	
MilitaryChairman			0.005*
			(2.148)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	2,502	1,442	1,970
OLS Adjusted R^2	0.279	0.287	0.288

***Notes*:** This table presents the results using the propensity score matched sample. Observations are matched by propensity score, within common support, without replacement, and a one-to-one match. The propensity of choosing top executives with military experience is predicted using the Probit regression of *MilitaryExecutives*, *MilitaryCEO*, or *MilitaryChairman* on control variables and year and industry fixed effects. Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. The balance tests are presented in Tables A3, A4, and A5 in the supplementary Appendix. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 9: Military experience of top executives and disclosure tone using 2SLS

Variables	(1) Military Executives	(2) Tone	(3) Military CEO	(4) Tone	(5) Military Chairman	(6) Tone
	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage
MilitaryArea	0.012**		0.008**		0.008**	
	(2.965)		(2.608)		(2.632)	
MilitaryExecutives		0.097*				
		(2.070)				
MilitaryCEO				0.128*		
				(2.048)		
MilitaryChairman						0.189†
						(1.770)
Control variables	Included	Included	Included	Included	Included	Included
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,633	29,633	29,633	29,633	29,633	29,633

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. The F-statistics from the first-stage regressions for the *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman* models are 19.23, 18.03, and 7.08, respectively. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 10: Military experience of top executives and disclosure tone using fixed effects

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.006**		
	(3.226)		
MilitaryCEO		0.006**	
		(2.803)	
MilitaryChairman			0.005*
			(2.571)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
Adj. R^2	0.189	0.189	0.189

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 11: Military experience of top executives and disclosure tone with controlling CEO and chairman characteristics

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.004**		
	(3.086)		
MilitaryCEO		0.004*	
		(2.527)	
MilitaryChairman			0.004*
			(2.571)
CEOGender	-0.000	-0.001	
	(-0.300)	(-0.454)	
CEOAge	0.000	0.000	
	(0.915)	(0.833)	
CEOTenure	-0.000	-0.000	
	(-0.740)	(-1.174)	
CEOFin	-0.002†	-0.003**	
	(-1.960)	(-2.918)	
ChairmanGender	-0.001		-0.001
	(-0.651)		(-0.707)
ChairmanAge	-0.000		0.000
	(-0.155)		(0.046)
ChairmanTenure	-0.000		-0.000
	(-0.986)		(-1.292)
ChairmanFin	-0.002*		-0.003**
	(-2.093)		(-2.882)
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Control variables	Included	Included	Included
Observations	29,633	29,633	29,633
OLS Adjusted R^2	0.200	0.199	0.200

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table 12: Fractional outcome regression after dropping negative Tone

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.026*		
	(1.971)		
MilitaryCEO		0.023	
		(1.409)	
MilitaryChairman			0.024
			(1.572)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	28,602	28,602	28,602
Pseudo R^2	0.0091	0.0091	0.0091

***Notes*:** Robust z-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Appendix

Table A13: Sample distribution over industries

Code	Industry Name	*N*	*%*
A	Agriculture, Forestry, Animal Husbandry, and Fishery	377	1.27
B	Mining	614	2.07
C	Manufacturing	19,817	66.87
D	Production and Supply of Electric Power, Thermal Power, Gas and Water	900	3.04
E	Construction	711	2.40
F	Wholesale and Retail	1,497	5.05
G	Transport, Storage and Postal	793	2.68
H	Hotels and Catering	88	0.30
I	Information Transmission, Software, and IT Service	1,922	6.49
K	Real estate	1,176	3.97
L	Leasing and Commercial Service	333	1.12
M	Scientific Research and Technology Service	298	1.01
N	Water Conservancy, Environment and Public Facility Management	397	1.34
O	Industry Of Resident Service, Repair and Other Services	20	0.07
P	Education	26	0.09
Q	Health and Social Work	67	0.23
R	Culture, Sports and Entertainment	372	1.26
S	Diversified	225	0.76
	Total	**29,633**	**100**

Table A14: Yearly distribution of the sample

Year	Military Executives		Military CEO		Military Chairman	
	Yes = 1	No = 0	Yes = 1	No = 0	Yes = 1	No = 0
2010	34	1,495	16	1,513	28	1,501
2011	57	1,788	37	1,808	41	1,804
2012	64	2,040	38	2,066	48	2,056
2013	69	2,046	33	2,082	56	2,059
2014	62	2,013	33	2,042	49	2,026
2015	76	2,177	42	2,211	61	2,192
2016	97	2,390	56	2,431	75	2,412
2017	135	2,689	78	2,746	106	2,718
2018	133	2,800	78	2,855	104	2,829
2019	156	2,887	91	2,952	123	2,920
2020	187	3,087	114	3,160	146	3,128
2021	181	2,970	105	3,046	148	3,003
Total	1,251	28,382	721	28,912	985	28,648

Balancing Tests of the Propensity Score Matching

To assess the quality of the matching procedure, we conduct covariate balance diagnostics for the *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman* samples. Panel A in Tables A3, A4, and A5 shows the balance tests for each covariate in the treated and control groups, both before and after matching. Panel B summarizes the overall balance improvement after the matching process. Overall, the results indicate that the standardized mean differences decrease after matching. Moreover, the treatment and control groups do not exhibit significant differences in the matched variables, confirming the validity of the balance and the parallel trends assumptions.

Table A15: PSM balance tests: MilitaryExecutives model

Panel A: Covariate balance test

Variable	Unmatched Matched	Mean		Standardized mean difference (%bias|)	Change in standardized mean difference (%reduct)	T-test		V(T) / V(C)
		Treated	Control			t	p>|t|	
Size	U	21.902	22.107	-16.800		-5.680	0.000	0.910
	M	21.902	21.922	-1.600	90.500	-0.410	0.681	1.030
Age	U	7.658	10.605	-42.700		-13.580	0.000	0.66*
	M	7.658	7.596	0.900	97.900	0.250	0.804	0.980
Lev	U	0.390	0.414	-11.900		-4.120	0.000	1.000
	M	0.390	0.386	1.800	84.700	0.460	0.643	1.070
Current	U	3.055	2.657	13.100		4.850	0.000	1.34*
	M	3.055	3.066	-0.400	97.100	-0.090	0.930	0.940
Loss	U	0.094	0.097	-1.100		-0.370	0.711	.
	M	0.094	0.086	2.700	-153.300	0.700	0.484	.
ROA	U	0.049	0.045	6.900		2.430	0.015	1.100
	M	0.049	0.051	-3.000	56.500	-0.750	0.451	1.14*
SalesGrow	U	0.196	0.183	3.300		1.120	0.261	0.89*
	M	0.196	0.205	-2.500	25.300	-0.630	0.530	0.930
BTM	U	0.573	0.615	-17.800		-5.990	0.000	0.87*
	M	0.573	0.570	1.500	91.500	0.390	0.700	0.920
Top10	U	0.567	0.569	-0.400		-0.150	0.879	.
	M	0.567	0.585	-3.700	-747.100	-0.930	0.352	.
BoardSize	U	8.327	8.548	-13.400		-4.550	0.000	0.930
	M	8.327	8.389	-3.700	72.100	-0.940	0.346	0.980
BoardInd	U	0.376	0.375	2.800		0.950	0.341	0.960
	M	0.376	0.375	1.700	39.400	0.420	0.672	0.990
BoardDiv	U	0.160	0.150	7.400		2.600	0.009	1.060
	M	0.160	0.153	5.300	28.800	1.330	0.182	1.110
SuperSize	U	3.276	3.514	-25.800		-7.930	0.000	0.55*
	M	3.276	3.252	2.600	89.900	0.780	0.438	1.030
Duality	U	0.302	0.297	1.100		0.390	0.695	.
	M	0.302	0.301	0.200	84.600	0.040	0.965	.
MagtOwner	U	0.212	0.145	31.900		11.350	0.000	1.12*
	M	0.212	0.211	0.600	98.000	0.150	0.878	0.980
ConcOwner	U	0.539	0.540	-0.300		-0.110	0.912	0.73*
	M	0.539	0.544	-3.400	-911.000	-0.860	0.387	0.75*
InstitOwner	U	0.366	0.430	-26.000		-9.060	0.000	1.030
	M	0.366	0.373	-2.900	88.900	-0.710	0.476	0.980

Panel B: Summary of balance test

Sample	Ps	R2	LR	chi2	p>chi2	MeanBias	MedBias	B
Unmatched	0.045	303.760	0.000	18.600	15.500	67.800*	0.790	50
Matched	0.005	9.120	0.937	3.100	2.000	15.900	0.970	43

Table A16: PSM balance tests: MilitaryCEO model

Panel A: Covariate balance test

Variable	Unmatched Matched	Mean		Standardized mean difference (%bias|)	Change in standardized mean difference (%reduct)	T-test		V(T) / V(C)
		Treated	Control			t	p>|t|	
Size	U	21.790	22.106	-26.600		-6.710	0.000	0.81*
	M	21.790	21.850	-5.000	81.300	-0.980	0.327	0.930
Age	U	7.158	10.563	-49.800		-12.010	0.000	0.64*
	M	7.158	7.459	-4.400	91.200	-0.940	0.346	0.980
Lev	U	0.389	0.414	-11.900		-3.140	0.002	0.980
	M	0.389	0.405	-7.800	34.700	-1.470	0.141	0.970
Current	U	3.157	2.662	15.500		4.630	0.000	1.57*
	M	3.157	2.876	8.800	43.100	1.640	0.102	1.41*
Loss	U	0.100	0.096	1.100		0.300	0.760	.
	M	0.100	0.103	-0.900	18.300	-0.170	0.862	.
ROA	U	0.049	0.045	5.500		1.490	0.135	1.080
	M	0.049	0.046	3.700	32.200	0.670	0.506	0.84*
SalesGrow	U	0.190	0.183	1.800		0.460	0.649	0.890
	M	0.190	0.187	0.800	55.600	0.160	0.871	1.26*
BTM	U	0.575	0.614	-17.400		-4.340	0.000	0.77*
	M	0.575	0.572	1.300	92.500	0.260	0.796	0.920
Top10	U	0.573	0.569	0.800		0.220	0.827	.
	M	0.573	0.563	2.000	-137.400	0.370	0.710	.
BoardSize	U	8.187	8.547	-21.000		-5.680	0.000	1.080
	M	8.187	8.186	0.100	99.600	0.020	0.987	1.18*
BoardInd	U	0.381	0.374	12.500		3.340	0.001	1.020
	M	0.381	0.381	0.200	98.000	0.050	0.963	0.930
BoardDiv	U	0.165	0.150	11.100		3.000	0.003	1.090
	M	0.165	0.155	7.100	35.600	1.350	0.178	1.070
SuperSize	U	3.276	3.509	-25.200		-5.950	0.000	0.58*
	M	3.276	3.320	-4.800	81.000	-0.980	0.326	0.75*
Duality	U	0.524	0.292	48.700		13.550	0.000	.
	M	0.524	0.542	-3.800	92.300	-0.690	0.493	.
MagtOwner	U	0.222	0.146	35.700		9.820	0.000	1.16*
	M	0.222	0.221	0.500	98.700	0.090	0.930	1.010
ConcOwner	U	0.540	0.540	0.400		0.100	0.920	0.72*
	M	0.540	0.540	-0.100	65.800	-0.030	0.978	0.79*
InstitOwner	U	0.353	0.429	-30.900		-8.240	0.000	1.030
	M	0.353	0.356	-1.300	95.700	-0.250	0.803	1.000

Panel B: Summary of balance test

Sample	Ps	R2	LR	chi2	p>chi2	MeanBias	MedBias	B
Unmatched	0.045	303.760	0.000	18.600	15.500	67.800*	0.790	50
Matched	0.005	9.120	0.937	3.100	2.000	15.900	0.970	43

Table A17: PSM balance tests: MilitaryChairman model

Panel A: Covariate balance test

Variable	Unmatched Matched	Mean		Standardized mean difference (%bias|)	Change in standardized mean difference (%reduct)	T-test		V(T) / V(C)
		Treated	Control			t	p>|t|	
Size	U	21.903	22.105	-16.500		-5.000	0.000	0.920
	M	21.903	21.855	3.900	76.300	0.920	0.355	1.18*
Age	U	7.324	10.589	-48.400		-13.410	0.000	0.59*
	M	7.324	7.317	0.100	99.800	0.030	0.978	1.010
Lev	U	0.390	0.414	-11.800		-3.630	0.000	0.980
	M	0.390	0.381	4.100	65.400	0.910	0.361	1.010
Current	U	2.979	2.664	10.600		3.430	0.001	1.21*
	M	2.979	3.098	-4.000	62.000	-0.830	0.409	0.88*
Loss	U	0.090	0.097	-2.200		-0.670	0.503	.
	M	0.090	0.090	0.000	100.000	0.000	1.000	.
ROA	U	0.051	0.045	10.100		3.200	0.001	1.110
	M	0.051	0.051	0.200	97.600	0.050	0.957	1.040
SalesGrow	U	0.194	0.183	2.900		0.850	0.395	0.83*
	M	0.194	0.170	6.300	-118.800	1.500	0.135	1.080
BTM	U	0.570	0.615	-19.200		-5.760	0.000	0.890
	M	0.570	0.569	0.300	98.400	0.070	0.944	1.010
Top10	U	0.577	0.569	1.600		0.500	0.614	.
	M	0.577	0.546	6.200	-276.300	1.360	0.173	.
BoardSize	U	8.266	8.548	-17.400		-5.180	0.000	0.86*
	M	8.266	8.333	-4.100	76.200	-0.980	0.328	1.110
BoardInd	U	0.375	0.375	1.200		0.360	0.716	1.010
	M	0.375	0.374	2.600	-120.300	0.590	0.556	1.130
BoardDiv	U	0.164	0.150	10.300		3.230	0.001	1.070
	M	0.164	0.164	-0.300	96.700	-0.070	0.941	1.030
SuperSize	U	3.256	3.512	-28.400		-7.610	0.000	0.49*
	M	3.256	3.229	2.900	89.700	0.790	0.431	0.940
Duality	U	0.384	0.294	19.000		6.050	0.000	.
	M	0.384	0.371	2.800	85.300	0.600	0.546	.
MagtOwner	U	0.218	0.145	34.700		10.920	0.000	1.090
	M	0.218	0.232	-6.700	80.700	-1.420	0.155	0.900
ConcOwner	U	0.537	0.540	-2.200		-0.620	0.538	0.70*
	M	0.537	0.540	-2.100	4.700	-0.470	0.642	0.76*
InstitOwner	U	0.359	0.430	-28.700		-8.880	0.000	1.020
	M	0.359	0.340	7.500	73.900	1.660	0.097	1.010

Panel B: Summary of balance test

Sample	Ps	R2	LR	chi2	p>chi2	MeanBias	MedBias	B
Unmatched	0.037	317.290	0.000	15.600	11.800	60.400*	0.590	43
Matched	0.005	12.520	0.767	3.200	2.900	15.900	0.960	21

Propensity Score using Weighting Using Machine Learning

To address potential limitations in traditional regression, we employed advanced machine learning techniques, specifically Classification and Regression Trees (CART), to improve propensity score weighting in our analysis of the impact of executives' military backgrounds on corporate disclosure tone. Traditional logistic regression methods often fall short due to their assumptions about variable selection, functional forms, and interactions, which can lead to biased estimates. Following the methodology highlighted by Lee et al. (2009), we utilized machine learning techniques to enhance the robustness of our findings. CART excels at handling non-linearity and complex interactions between covariates, ensuring a more accurate balance of covariates and reducing bias in treatment effect estimation. This technique allows for a sophisticated understanding of the relationships between variables, accommodating the intricate dynamics present in our data.

In Panel A of Table A6, our results indicate that the coefficient of executives' military backgrounds is positive and statistically significant at the 1% level across all three models (Columns 1, 2, and 3). This supports our baseline results, demonstrating a robust positive effect of military experience on corporate disclosure tone, reinforcing our primary hypothesis. In Panel B of Table A6, we further explore the interaction effects between state ownership (*SOE*) and military experience. The coefficients for SOE interactions with *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman* are all negative and significant at the 5% level, indicating that the positive effect of military experience on disclosure tone is attenuated in state-owned enterprises.

By incorporating machine learning-based propensity score weighting, we address the limitations of traditional OLS and enhance the validity of our findings. The use of CART allows us to handle non-linearities and complex interactions effectively, providing a more nuanced understanding of how military backgrounds influence corporate disclosure tone. This approach aligns with best practices in modern statistical analysis, ensuring that our conclusions are robust and reliable.

Table A18: Propensity Score using Weighting Using Machine Learning

Panel A	**Classification and regression trees (CART)**		
	(1) Tone	**(2) Tone**	**(3) Tone**
MilitaryExecutives	0.005***		
	4.372		
MilitaryCEO		0.005***	
		3.314	
MilitaryChairman			0.004***
			3.301
Controls	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
Panel B	**Tone**	**(2) Tone**	**(3) Tone**
SOE	0.002**	0.002*	0.002*
	1.985	1.940	1.920
MilitaryExecutives	0.006***		
	4.712	0.006***	
MilitaryCEO		3.766	
			0.005***
MilitaryChairman			3.631
*SOE*MilitaryExecutives*	-0.010**		
	-2.422		
*SOE*MilitaryCEO*		-0.015**	
		-2.780	
*SOE*MilitaryChairman*			-0.013**
			-2.319
Controls	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633

***Notes*:** This table presents the results using the Propensity Score Weighting Using Machine Learning. Observations are propensity score weighting using CART. Robust T-statistics in parentheses. Significance level: ***$p<0.01$, **$p<0.05$ and *$p<0.1$, using two-tailed tests. Variable definitions are provided in Appendix A.

Heckman Two-Stage Approach

To deal with the possible self-selection bias, we utilize the Heckman two-stage approach. In the first stage of estimation, we run Probit regressions to capture the factors (i.e., control variables used in main regressions) that predict the probability of recruiting top executives with military experience, namely, *MilitaryExecutives*, *MilitaryCEO*, and *MilitaryChairman*. In addition, we use *MilitaryArea,* which is the number of military ranks awarded in the province where the firm headquarters is located as an exclusion restriction in the first stage (Quan et al., 2023). We assume that regions with stronger military influence increase the likelihood of appointing military-experienced executives but do not directly affect disclosure tone. Then in the second stage, the estimated inverse Mills ratio (*IMR*) obtained from the Probit regressions is added as an additional explanatory variable to Equations (1), (2), and (3). Again, our findings reported in Table A7 are consistent with the findings reported under the main analysis, suggesting that our results are not purely driven by selection bias.

Table A19: Military experience of top executives and disclosure tone using the Heckman approach

Variables	(1) Military Executives	(2) Tone	(3) Military CEO	(4) Tone	(5) Military Chairman	(6) Tone
	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage
MilitaryArea	0.078*		0.093**		0.051	
	(2.479)		(2.809)		(1.553)	
MilitaryExecutives		0.005**				
		(3.197)				
MilitaryCEO				0.004**		
				(2.576)		
MilitaryChairman						0.004**
						(2.635)
IMR		-0.005		-0.004		-0.008
		(-0.605)		(-0.608)		(-0.707)
Control variables	Included	Included	Included	Included	Included	Included
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,236	29,236	28,788	28,788	29,206	29,206
Pseudo R^2/Adj. R^2	0.069	0.198	0.085	0.197	0.078	0.197

This table reports the results from the Probit regression model of *MilitaryExecutives*, *MilitaryCEO*, or *MilitaryChairman* after controlling for self-selection bias using inverse Mill's ratio (*IMR*) estimated by Heckman's two-stage method. Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Disclosure tone and firm performance

The baseline regression results suggest that executives with military experience increase disclosure tone. In this subsection, we test the implications of an improved disclosure tone on firm performance. The coefficients and P-values of disclosure tone in Columns (1), (2) and (3) in Table A8 are positive and significant, indicating that corporate communication decisions lead to better firm performance.

The positive and significant coefficients for *TobinQ*, *ROA*, and *ROE* indicate that an enhanced disclosure tone is associated with improved firm performance metrics. Specifically, the coefficient of 0.446 in Column (1) suggests a strong positive impact on *TobinQ*, while the coefficients of 0.129 and 0.238 in Columns (2) and (3) show significant positive effects on *ROA* and *ROE*, respectively. These findings underscore the importance of effective corporate communication in driving superior firm performance.

Table A20: Disclosure tone and firm performance

Variables	**(1)** **TobinQ**	**(2)** **ROA**	**(3)** **ROE**
Tone	0.446*	0.129***	0.238***
	(2.542)	(15.100)	(13.341)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
OLS Adjusted R^2	0.323	0.574	0.530

***Notes*:** Robust T-statistics in parentheses. Significance level: $^{\dagger}\ p < 0.1$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table A21: Moderating of impact of military experience on the impact of disclosure tone and firm performance

Variables	(1) TobinsQ	(2) ROA	(3) ROE	(4) TobinsQ	(5) ROA	(6) ROE	(7) TobinsQ	(8) ROA	(8) ROE
HighTone	0.017	0.008***	0.015***	0.019	0.008***	0.015***	0.016	0.008***	0.015***
	(1.293)	(16.183)	(13.408)	(1.476)	(16.411)	(13.440)	(1.217)	(16.323)	(13.562)
MilitaryExecutives	-0.030	-0.002	0.001						
	(-0.592)	(-0.730)	(0.193)						
MilitaryCEO				-0.087	-0.001	0.001			
				(-1.372)	(-0.316)	(0.157)			
MilitaryChairman							-0.054	-0.001	0.003
							(-0.894)	(-0.381)	(0.617)
*HighTone*MilitaryExecutives*	0.084	0.004	0.003						
	(1.372)	(1.645)	(0.523)						
*HighTone*MilitaryCEO*				0.064	0.005	0.009			
				(0.795)	(1.525)	(1.280)			
*HighTone*MilitaryChairman*							0.141*	0.004	0.002
							(1.966)	(1.482)	(0.331)
Control variables	Included	Included	Included	Included	Included	Included	Included	Included	Included
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	29,633	29,633	29,604	29,633	29,633	29,604	29,633	29,633	29,604
OLS Adj. R^2	0.233	0.573	0.529	0.323	0.573	0.529	0.323	0.573	0.529

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table A22: Military experience and disclosure tone in manufacturing vs services industries

Variables	(1) Tone	(2) Tone	(3) Tone
Manufact	0.009*	0.009*	0.009*
	(2.238)	(2.261)	(2.160)
MilitaryExecutives	0.005*		
	(2.202)		
MilitaryCEO		0.008*	
		(2.513)	
MilitaryChairman			0.002
			(0.843)
*Manufact*MilitaryExecutives*	-0.001		
	(-0.438)		
*Manufact*MilitaryCEO*		-0.005	
		(-1.394)	
*Manufact*MilitaryChairman*			0.003
			(0.910)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
OLS Adj. R^2	0.199	0.198	0.199

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table A23: Moderating impact of firm size on the military experience of top executives and disclosure tone

Variables	(1) Tone	(2) Tone	(3) Tone
HighTobinsQ	0.000	0.000	-0.000
	(0.032)	(0.106)	(-0.029)
MilitaryExecutives	0.004†		
	(1.866)		
MilitaryCEO		0.005†	
		(1.716)	
MilitaryChairman			0.002
			(1.111)
*HighTobinsQ*MilitaryExecutives*	0.001		
	(0.603)		
*HighTobinsQ*MilitaryCEO*		-0.000	
		(-0.001)	
*HighTobinsQ*MilitaryChairman*			0.003
			(1.210)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
OLS Adj. R^2	0.199	0.198	0.199

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table A24: Moderating impact of foreign ownership on the military experience of top executives and disclosure tone

Variables	(1) Tone	(2) Tone	(3) Tone
ForeignOwner	0.008	0.009	0.008
	(0.803)	(0.848)	(0.780)
MilitaryExecutives	0.004**		
	(3.095)		
MilitaryCEO		0.004*	
		(2.526)	
MilitaryChairman			0.004*
			(2.542)
*ForeignOwner*MilitaryExecutives*	0.024		
	(1.288)		
*ForeignOwner*MilitaryCEO*		0.009	
		(0.547)	
*ForeignOwner*MilitaryChairman*			0.048*
			(2.180)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	29,633	29,633	29,633
OLS Adj. R^2	0.199	0.1990	0.199

***Notes*:** Robust T-statistics in parentheses. Significance level: $^{\dagger}\ p < 0.1$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table A25: Military experience of top executives and disclosure tone using lag of dependent variables

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.003*		
	(2.005)		
MilitaryCEO		0.004†	
		(1.783)	
MilitaryChairman			0.001
			(0.753)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	23,360	23,360	23,360
OLS Adj. R^2	0.202	0.202	0.202

***Notes*:** Robust T-statistics in parentheses. Significance level: $^{\dagger}\ p < 0.1$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.

Table A26: Military experience of top executives and disclosure tone with clustering at CEOs and/or Chairmen level

Variables	(1) Tone	(2) Tone	(3) Tone
MilitaryExecutives	0.004**		
	(2.604)		
MilitaryCEO		0.004†	
		(1.864)	
MilitaryChairman			0.004†
			(1.814)
Control variables	Included	Included	Included
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Observations	23,360	23,360	23,360
Adj. R^2	0.202	0.202	0.202

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the CEOs and/or Chairmen.level. Variable definitions are provided in Appendix A.

Table A27: Military experience of top executives with excluding (including) controls and the year and industry fixed effects

Variables	(1) Tone	(2) Tone	(3) Tone	(4) Tone	(5) Tone	(6) Tone	(7) Tone	(8) Tone	(9) Tone	(10) Tone	(11) Tone	(12) Tone
MilitaryExecutives	0.005***	0.007***	0.005***	0.006***								
	(3.552)	(4.360)	(3.156)	(4.235)								
MilitaryCEO					0.005***	0.006***	0.005***	0.006***				
					(2.649)	(3.334)	(2.729)	(3.073)				
MilitaryChairman									0.005***	0.006***	0.004**	0.006***
									(3.039)	(3.582)	(2.440)	(3.655)
Control variables	Excluded	Included	Included	Included	Excluded	Included	Included	Included	Excluded	Included	Included	Included
Year FE	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Industry FE	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	No	Yes
Observations	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633	29,633
OLS Adj. R^2	0.115	0.095	0.174	0.124	0.115	0.095	0.173	0.123	0.115	0.095	0.173	0.123

***Notes*:** Robust T-statistics in parentheses. Significance level: † $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, using two-tailed tests. Robust standard errors adjusted for clustering at the firm level. Variable definitions are provided in Appendix A.