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CEO Tenure and Strategic Change: The moderating role of CEO regulatory focus and resource constraints

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ABSTRACT

Purpose: This study aims to investigate whether CEO tenure influences a firm's strategic decision. Although there has been extensive research on the relationship between CEO tenure and strategic change, little research addresses whether long-tenured CEOs have the same propensity for strategic choices. In addition, there is still untapped research topics that the extent to which long-tenured CEOs' actions are contingent upon the CEO characteristics and resources. This study proposes that not all long-tenured CEOs have the same attitude to strategic persistence, and we argue that this relationship varies under different contingencies of CEOs' psychological characteristics and firm resources.

Design/methodology/approach: The sample of this study includes 906 (firm-year) observations from 172 publicly traded U.S. manufacturing firms between 2005 and 2011. This study conducts generalized estimating equations (GEE) model to test our hypotheses.

Findings: The finding shows that long-tenured CEOs are more likely to hesitate to make radical strategic change. The results also show that various boundary conditions shape the positive relationship between CEO tenure and strategic persistence. Specifically, results show that the positive relationship between CEO tenure and strategic persistence is amplified when the CEO has a strong prevention focus, and there is a strong level of resource constraints.

Research limitations/implications: This study has limitations related to the measurement of regulatory focus. Although we use CEO letters to shareholders to measure CEO regulatory focus by following existing studies, this measurement could not fully capture CEOs' internal characteristics. In addition, this study does not consider the impact of TMT members. Future studies need to consider the interaction effect of TMT members.

Originality/value: This study extends CEO tenure literature by adopting the concept of the CEO paradigm. Although there is acknowledged importance of CEO tenure in existing research, there has been limited exploration of the direct link between CEO tenure and strategic change. This study adds depth to theoretical insights by delving into various interactions such as CEO psychological traits and firm resources.

Keywords: CEO tenure, Strategic change, Regulatory focus, Resource constraints

I. Introduction

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The impact of strategic decision-making of the firm has been a main subject of strategic management

field (Weng & Lin, 2012). In consistence with upper echelons theory, strategic decision-making reflects the "idiosyncrasies of decision makers" (Hambrick & Mason, 1984). Not surprisingly, extensive prior studies have argued that CEOs lead to various organizational changes such as strategic reorientation (Lant et al., 1992), discontinued operations (Barron et al., 2011), and investment allocation (Chan & Ting-Ting, 2011). Given the pivotal role of a CEO in an organization, it has been argued that CEO characteristics such as CEO age, tenure, or educational background are closely linked to strategic decision-making (Finkelstein et al., 2009; Gordon et al., 2000).

Especially, previous studies posit that one important antecedent of strategic change is CEO tenure (Miller, 1991). For example, Finkelstein et al. (2009) suggest that CEO tenure is one consistent factor influencing a firm's strategy. Similarly, Hambrick and Fukutomi (1991: 723) argue that CEOs make strategic decisions with their own "paradigm". Executives' paradigm developed and strengthened as the CEOs' tenure increases (Hambrick & Fukutomi, 1991). Long-tenured CEOs become increasingly committed to their perspectives while new CEOs have more open minded to initiate change (Weng & Lin, 2012). As such, CEOs gradually restrict to adapt new information and tend to avoid demand for change. As a result, they become complacent with their prior knowledge, experiences, and prior success and have conservative attitude toward changes and high risk (Chen & Zheng, 2014; Musteen et al., 2006). For example, Miller and Shamsie (2001) argued that tendency of strategic persistence are gradually increases as the CEO tenure increases.

Although this argument has been supported by extensive previous studies, there are still untapped research topics which are: (a) whether long-tenured CEOs have the same propensity to initiate strategic change and (b) the extent to which long-tenured CEOs' actions are contingent upon the CEO characteristics and resources. In this study, we describe how CEO tenure affects strategic persistence with various interaction effects. Specifically, we test our argument in the context of CEOs' psychological traits (i.e.,

regulatory focus) and firm resources. Despite most previous studies confirm that CEO tenure has a significant effect on strategic change, this study contributes to existing CEO characteristic literature by arguing that not all CEOs will have the same tendency to initiate change. In this regard, we examine the interaction effect of CEOs' psychological characteristics by adopting the regulatory focus theory. Further, because strategic change is best studied in the context of various inter-firm environments, we also examine how firm's resource constraints moderates the relationship between CEO tenure and strategic change.

II. Theory and Hypotheses

A. Regulatory Focus Theory

Regulatory focus, regarded as crucial aspect of an individual's self-regulation (Higgins, 1997; Higgins & Pinelli, 2020) is a theoretical framework that delineates two distinct regulatory foci governing how individuals approach pleasure and avoid pain: promotion and prevention focus (Higgins, 1997). In general, those with a promotion focus are primarily driven by a desire for growth and advancement, whereas individuals with a prevention focus are motivated by the need for security and safety (Brockner et al., 2004; Crowe & Higgins, 1997; Qian et al., 2024).

Such different motivational forces associated with these foci significantly impact an individual's strategic decision-making preferences. Those with a high promotion-focus tend to assess situation in terms of gain/non-gain, emphasizing positive outcomes related to advancement, aspirations, and accomplishments (Halamish et al., 2008; Higgins, 2002; Liang et al., 2024). Conversely, individuals with a high prevention-focus frame their considerations in terms of loss/non-loss, prioritizing the avoidance of negative outcomes associated with protection, safety, and responsibilities (Halamish et al., 2008; Higgins &

Pinelli, 2020). Gamache et al. (2015) argue that CEOs with a strong promotion focus are more likely to engage in acquisition activities, driven by their inclination to-wards risk-taking. In contrast, CEOs with a strong prevention focused exhibit a lower propensity for involvement in acquisition activities due to their risk-averse nature (Wagner & Fischer-Kreer, 2023).

B. Slack Resources Theory

Slack resources refer to "the stock of excessive resources available to an organization during a given planning cycle" (Voss et al., 2008: 148). Slack resources offer firms with protection against risk and allow firms to participate in proactive strategic activities. Sufficient slack resources allow a firm to compete more actively (Xiao et al., 2018). In addition, enough slack could reduce the risk involved in executing new strategies. For example, when a firm has enough slack resources, it gains the flexibility to explore new strategies such as implementing fresh techniques, launching new products, or expanding into different markets. In short, organizations with sufficient resources have fewer constraints when making strategic decisions, compared to those operating under resource constraints, as they can avoid the necessity of balancing multiple objectives with limited resources.

C. CEO Tenure and Strategic Persistence

Recall that CEOs are acting based on their paradigm, long-tenured CEOs have more conservative attitude toward change in their organizations. Such strong commitment to the status quo may hinder CEOs to make radical strategic changes and increase tendency of strategic persistence. As such, we expect that strategic change is less likely to occur when a CEO has a long tenure.

First, longer tenure can be viewed as lack of adaptability and have a narrow scope of information.

With increased time spent in a firm as a CEO, their experience and knowledge related to their business also increase (Musteen et al., 2006). That is, longer-tenured CEOs are more likely to rely on existing information sources and resist adapting to environmental changes (Miller, 1991). Wu et al. (2005) argue that longer-tenured CEOs have strongly established repertoires, which in turn restrict their exploration for new practices or information. As such, given that CEOs with longer tenures are deeply entrenched in their existing paradigms, they are less inclined to actively seek out and absorb new information, which is crucial for instigating strategic changes.

Second, longer-tenured CEOs generally have risk-averse propensity. CEOs with longer tenure devote less attention to emerging opportunities with higher risk, which can be an important prerequisite for strategic change (Back et al., 2020). Bertrand and Mullainathan (2003) argue that entrenched managers are more likely to be risk-averse to protect their private benefits. Similarly, Bernstein et al. (2016) posit that long-tenured CEOs become more attached to the status quo. In other words, they are more committed to strategies they previously established in order to achieve success and stability.

Taken together, longer-tenured CEOs are more committed to their long-held paradigms which makes them put less effort into gaining new information and results in risk-averse behavior. As such, we suggest that there is a positive impact of CEO tenure on strategic persistence.

H1: CEO tenure is positively related to strategic persistence.

D. The Moderating Role of CEO Regulatory Focus

Although there is an anticipated relationship between CEO tenure and strategic persistence, this study posits that the propensity for change among long-tenured CEOs varies. In this regard, we further examine the moderating effects of CEO psychological

characteristics by adapting the regulatory focus theory. As noted earlier, the regulatory focus theory posits that individuals with a strong promotion focus prioritize organizational change and risk-taking, while those with a high prevention focus lean towards continuity and exhibit risk-averse behavior (Crowe & Higgins, 1997). For example, Kark and VanDijk (2007) argue that leaders with a strong promotion focus are characterized by values such as openness to change and willingness to make risk-taking decisions. Conversely, leaders with a strong prevention focus place a higher value on conservation and adhering to established norms. Moreover, individuals' regulatory foci operate differently when pursuing goals (Higgins, 1997). Promotion-focused CEOs aim to maximize gains by self-regulating their behaviors to align with the achievement of personal career ambitions (Zivnуска et al., 2019). On the other hand, prevention-focused CEOs aim to minimize losses by self-regulating their behavior to adhere to organizational rules (Higgins, 1997).

In light of these distinctions, this study suggests that CEOs' regulatory foci interact with the length of CEO tenure. CEOs with a strong promotion focus are linked with accomplishment, implementing strategic actions for gains, and favoring risk-taking decisions for positive outcomes. As such, even though longer-tenured CEOs face less pressure for strategic changes compared to new CEOs, those with a strong promotion focus are more inclined to initiate such changes due to their emphasis on gains and achievement through risk-taking. On the other hand, long-tenured CEOs with a strong prevention focus, being more sensitive to losses and exhibiting risk-averse tendencies (Crowe & Higgins, 1997), prioritize maintaining the firm's stability over radical changes. In sum, we posit that the positive effect of CEO tenure on strategic persistence will be weakened when a CEO has a strong promotion focus. Furthermore, this relationship will be more pronounced when a CEO has a strong prevention focus.

H2a: The positive relationship between CEO tenure and strategic persistence is weakened by CEO

promotion focus.

H2b: The positive relationship between CEO tenure and strategic persistence is more pronounced by CEO prevention focus.

E. The Moderating Role of Resource Constraints

We further argue that longer-tenured CEOs have a tendency toward strategic persistence that can be influenced by the firm's resources. Slack resources provide firms with protection against risk and allow firms to participate in proactive strategic activities (Cyert & March, 1963). In other words, the availability of slack resources plays a key role to make CEOs to implement strategic changes.

Enough resources can reduce that risk involved in initiating the radical strategic changes which are involved in high-level risks. In terms of such risks, easily transferable resources such as cash reserves can help CEOs to expand the scope of the course of action. Accordingly, proponents of the resource-based view argue that managers require slack to engage in innovative strategies (Sirmon et al., 2007). For example, Marlin and Geiger (2015) found that enough slack encourages CEOs to innovate by providing a buffer against the risks associated with experimentation. On the other hand, a lack of resources limits a manager's ability to initiate strategic changes. As such, long-tenured CEOs will respond more aggressively to adapt to change and unpredictability. In other words, when a firm is suffering from a lack of resources, long-tenured CEOs are more likely to hesitate to initiate changes because there are high-level of risks that may threaten their career. Based

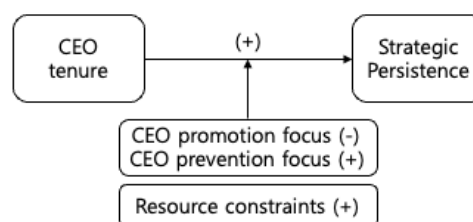


Figure 1. Research model

on the above argument, we hypothesize:

H3: The positive relationship between CEO tenure and strategic persistence is more pronounced by resource constraints.

Figure 1 shows our research model. It illustrates the relationship between main hypothesis and the interaction effects of CEO regulatory focus and resource constraints.

III. Methods

A. Sample

The sample for this study includes U.S. publicly traded firms for the years 2005 to 2011. The sample used in this study was restricted to manufacturing firms because strategic change or persistence decisions are argued to be most critical to creating and maintaining competitive advantage in manufacturing industries (Benischke et al., 2019). For the data collection, we used variety archival data sources such as *Compustat* and *Boardex*. In addition, to be included in our sample, each firm's CEO letter to shareholders must be available. We excluded those with missing CEO letter to shareholders and CEO information. Our final sample includes 906 firm-year observations from 172 firms.

B. Variables and Measurement

1. Dependent variable

Strategic persistence is defined as the extent to which a firm's strategy remains fixed over time (Finkelstein & Hambrick, 1990). The composite measure of strategic persistence was calculated by using six key strategic indicators: (1) advertising intensity; (2) research and development intensity; (3) plant and equipment newness; (4) non-product

overhead (5) inventory levels; (6) financial leverage. The composite strategic persistence calculated as follows: First, we computed the firm's five-year variance for each strategic dimension. Second, we standardized each dimension's variance scores by the sample, and multiplied by minus one to bring the measures in line with the concept of persistence. Lastly, the average of the six standardized values is summed to create a composite measure.

2. Independent variable

We measured CEO tenure as the number of years that the individual had occupied the position as a CEO (Moon, 2017).

3. Moderating variables

First, we measured CEO regulatory focus by adopting cognitive-linguistic perspective, as proposed by Gamache et al. (2015). This perspective argues that there exists a strong correlation between an individual's mental representations and the language they use (Hart, 2014). Prior research has successfully employed the cognitive-linguistic perspective to capture an individual's regulatory focus (Gamache et al., 2015; Johnson et al., 2013). Following the methodological procedure outlined by Gamache et al. (2015), we used the same set of words to track regulatory focus by the ratio of promotion-oriented (e.g., gain, achieve) and prevention-oriented (e.g., loss, safety) words the CEOs wrote in the letters. The set of dictionary consists of 27 promotion-oriented words, and 25 prevention-oriented words, including alternative tenses of these words (see Appendix 1) (Gamache et al., 2015). To conduct content analysis, we employed the Linguistic Inquire and Word Count (LIWC) software package (Gamache et al., 2015; Pennebaker et al., 2007). This package identifies the words belonging to each promotion or prevention category and calculates the proportion of target words out of all words written in each letter.

Our second moderating variable is resource constraints. Resource constraints is measured by

debt-to-equity ratio (Bourgeois, 1981). It was calculated by long-term debt divided by the firm's equity.

4. Control variables

We controlled firm, governance, and CEO characteristics that might affect to strategic persistence. First, we controlled firm age and size for firm characteristics. Firm age was calculated by years of operation since its foundation. Firm size was also included since firm size is closely related to the magnitude of strategic change. Firm size was calculated by the logarithms of total sales (Shen & Cannella, 2002). Current ratio represents the firm's ability to meet its obligations with their available resources (Daniel et al., 2004). As such, we controlled for current ratio by calculating current assets divided by current liabilities.

Second, corporate governance characteristics are known to affect strategic decision makings (Datta et al., 2003). Thus, we controlled board size and board composition. Board size was measured as the overall count of directors serving on the board. The proportion of outside directors was calculated by dividing the number of outside directors by the total count of board members.

Third, previous studies have suggested that CEOs' demographic characteristics are associated with strategic change (Datta et al., 2003). Thus, we controlled for CEO characteristics including CEO age, duality, gender, and compensation. We controlled for CEO age is obtained from *ExecuComp* and firm proxy statement if necessary. For CEO duality, we created a dummy variable coded as 1 if CEO is also chairman of the board, or 0 otherwise. CEO gender was coded as 1 if CEO was a male and 0 for a female. CEO compensation closely reflect his or her power in an organization (Cho et al., 2023; Kim et al., 2018). Thus, we control CEO compensation by measuring the logarithmically transformed total cash pay which is the sum of salary and bonus due to the positively skewed distribution (Wade et al., 2006).

Fourth, we controlled length of letters to shareholder because it varies across firms (Yadav et al., 2007).

Length of letters to shareholder was measured by using number of total words written in the letter, and log transformed since it was highly skewed. Lastly, we included year and industry dummy variables to control year and industry specific heterogeneity.

5. Statistical analysis

Our final dataset includes 906 firm-year observation from 172 firms. For the statistical analysis, we used maximum likelihood estimation of generalized estimating equations (GEE) approach. GEE accounts for nonindependence across observations in the panel data and offers more robust analysis when autocorrelation problem exists than random or fixed effects models (Gamache et al., 2020; Liang & Zeger, 1986), and it does not assume the dependent variable is normally distributed (Ndofor et al., 2009). Further, we investigated variance inflation factors (VIFs) for the potential multicollinearity problem. The mean VIF value was 1.23, and we found that all VIFs were smaller than 5 which is far below the conventional threshold of 10 (Neter et al., 1985), thus we do not have multicollinearity issues.

IV. Results

The means, standard deviations, and correlation for the data are presented in Table 1. Table 2 presents the results of GEE regression analysis for our hypotheses. Model 2 examines the main effect of CEO tenure and strategic persistence. As shown in Model 2, longer tenured CEOs have strong strategic persistency ($\beta = 0.05$, $p \leq 0.01$). Thus, this result offers support for Hypothesis 1 and it supports upper echelon theory which posits that CEO characteristics are reflected in the strategic decisions of the firm (Wang et al., 2016).

Model 3 to Model 5 in Table 2 present the results of interaction effects. Model 3 and Model 4 present the moderating roles of CEO regulatory foci, testing

Table 1. Descriptive statistics: Means, standard deviations, and correlations

Variables	Mean	S.D.	1	2	4	5	7	8	10	11	12	13	14
1.Strategic persistence	0.18	2.77	1.00										
2. Firm size	8.80	1.12	0.10										
3. Firm age	84.07	46.71	0.10	0.19									
4. Current ratio	1.94	0.96	-0.10	-0.31	-0.28								
5. Board size	2.35	0.17	0.12	0.39	0.33	-0.19							
6. Percentage of outside directors	0.87	0.06	0.04	0.13	0.02	-0.13	0.11						
7. CEO age	55.84	5.70	-0.01	0.10	0.07	-0.01	0.06	0.05					
8. CEO duality	0.95	0.21	0.06	0.07	0.12	-0.07	0.02	0.11	0.04				
9. CEO gender	0.98	0.16	-0.07	-0.17	-0.08	0.07	-0.01	-0.02	0.10	-0.04			
10. CEO compensation	7.11	0.64	0.04	0.35	0.04	-0.18	0.11	0.03	0.10	0.02	-0.04		
11. Length of letters to shareholder	7.38	0.47	0.01	0.18	0.22	-0.11	0.16	0.10	0.01	-0.00	0.12		
12. CEO promotion focus	1.21	0.48	0.05	-0.16	0.06	-0.08	-0.07	0.03	0.03	-0.03	-0.06	-0.19	
13. CEO prevention focus	0.14	0.16	-0.00	0.13	0.06	0.01	0.05	0.02	0.05	0.02	0.01	0.09	-0.03
14. Resource constraints	0.05	22.93	0.03	-0.02	-0.00	0.02	0.02	0.04	-0.04	0.01	-0.01	0.00	-0.02
15. CEO tenure	6.29	4.32	0.03	-0.03	-0.07	0.15	-0.03	-0.03	0.38	-0.01	0.02	0.00	-0.02

a. Correlations greater than |0.05| are significant at $p \leq 0.05$ and those greater than |0.07| are significant at $p \leq 0.01$

b. Two-tailed coefficient test (N=906)

Hypotheses 2a and 2b. Hypothesis 2a predicted that the positive relationship between CEO tenure and strategic persistence is weakened when CEOs have a strong promotion focus. However, the interaction

effect in Model 3 is not significant ($\beta = -0.00$, n.s.), so we do not find any support for Hypothesis 2a. In Hypothesis 2b, we predicted that the preventive-focused CEOs will strength the positive relationship

Table 2. GEE regression analysis on strategic persistence

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	β	S.E.	β	S.E.	β	S.E.	β	S.E.	β	S.E.
Constant	-4.28	(2.89)	-2.74	(2.84)	-2.74	(2.85)	-2.22	(2.79)	-2.59	(2.89)
Firm size	0.07	(0.20)	0.10	(0.20)	0.10	(0.20)	0.10	(0.20)	0.11	(0.20)
Firm age	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Current ratio	-0.11	(0.16)	-0.15	(0.15)	-0.16	(0.15)	-0.15	(0.16)	-0.16	(0.15)
Board size	2.16*	(0.87)	2.17**	(0.84)	2.17**	(0.84)	2.11**	(0.81)	2.17**	(0.84)
Percentage of outside directors	0.64	(1.37)	0.47	(1.39)	0.47	(1.39)	0.39	(1.40)	0.53	(1.39)
CEO age	-0.00	(0.02)	-0.03	(0.02)	-0.02	(0.02)	-0.02	(0.02)	-0.03	(0.02)
CEO duality	0.18	(0.45)	0.22	(0.43)	0.22	(0.43)	0.19	(0.43)	0.21	(0.43)
CEO gender	-0.38	(0.55)	-0.43	(0.52)	-0.43	(0.52)	-0.49	(0.51)	-0.42	(0.52)
CEO compensation	-0.03	(0.14)	-0.09	(0.14)	-0.09	(0.14)	-0.09	(0.14)	-0.09	(0.14)
Length of letters to shareholder	-0.16	(0.18)	-0.14	(0.19)	-0.14	(0.19)	-0.16	(0.19)	-0.17	(0.19)
CEO promotion focus			-0.01	(0.13)	-0.00	(0.17)	0.01	(0.13)	-0.00	(0.13)
CEO prevention focus			-0.49	(0.42)	-0.49	(0.42)	-1.50 [†]	(0.83)	-0.44	(0.41)
Resource constraints			0.00	(0.01)	0.00	(0.01)	0.00	(0.01)	-0.02**	(0.01)
CEO tenure			0.05**	(0.02)	0.05*	(0.03)	0.03 [†]	(0.02)	0.05*	(0.02)
CEO tenure \times CEO promotion focus					-0.00	(0.20)				
CEO tenure \times CEO prevention focus							0.16 [†]	(0.09)		
CEO tenure \times resource constraints									0.01***	(0.00)
Wald Chi-Square(d.f.)	34.60(22)*		35.62(26)*		35.84(27)*		35.82(27)*		104.33(27)***	
Number of observations	906		906		906		906		906	

a. [†] $\leq .10$, * $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

b. Two-tailed coefficient test; Regression coefficients are unstandardized with standard errors in parentheses.

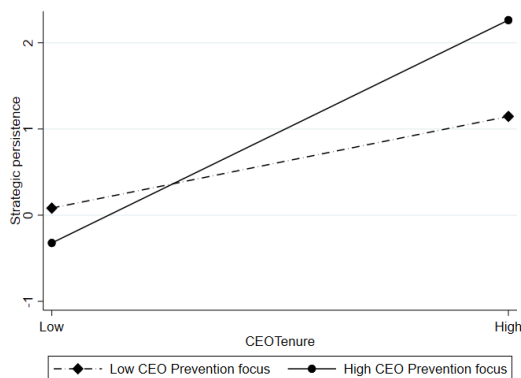


Figure 2. Effects of CEO tenure on strategic persistence at different levels of CEO prevention focus

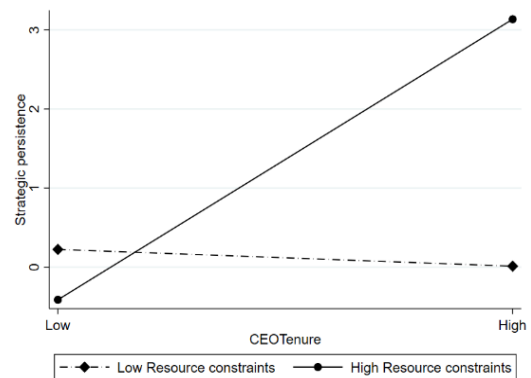


Figure 3. Effects of CEO tenure on strategic persistence at different levels of resource constraints

between CEO tenure and strategic persistence. As predicted, the positive relationship between CEO tenure and strategic persistence is stronger when CEOs have a strong prevention focus ($\beta = 0.26, p \leq 0.10$). Such findings marginally support regulatory focus theory by showing that long tenured CEOs with a strong prevention focus are more likely to hesitate to make radical strategic change. Figure 2 illustrates this interaction effect, showing that longer-tenured CEOs are more likely to avoid strategic change when he or she have a strong prevention focus. Thus, our result provide support for Hypothesis 2b.

Finally, Model 5 presents the moderating roles of resource constraints. Hypothesis 3 posits that resource constraints will strengthen the positive relationship between CEO tenure and strategic persistence. The result shows that long-tenured CEOs are more likely to avoid strategic changes when the firm has scarce slack resources ($\beta = 0.01, p \leq 0.001$). Figure 3 displayed this interaction result, showing that CEO tenure has a positive relationship with strategic persistence when resource constraints level is high, but the relationship becomes negative when there are munificent resources. Thus, we found a strong support for Hypothesis 3.

V. Discussion & Conclusion

In this study, we explored the influence of CEO tenure on strategic persistence. By analyzing U.S. manufacturing firms, our result shows that CEO tenures is positively associated with strategic persistence. Consistent with concept drawn from the fixed paradigm, we found that long-tenured CEOs are less likely to be highly involved initiating strategic changes. This result is closely linked to existing research arguing that CEOs with long tenures tend to avoid risk-taking decisions that could cause resource-draining (Back et al., 2020; Liu et al., 2024). In addition, we find that such relationship is strengthened when long-tenured CEOs have a strong prevention

focus, and a firm experiences lack of resources.

Our findings have several theoretical and practical contributions. First, this study extends CEO tenure literature by adopting the concept of CEO paradigm. Despite the acknowledged importance of CEO tenure in existing studies, there has been limited exploration of the direct link between CEO tenure and strategic persistence. Our study adds depth to theoretical insights by delving into various interactions, including CEO psychological and firm characteristics.

Second, this study contributes to the CEO characteristics literature through the incorporation of the regulatory focus theory. Existing research has primarily focused on the impact of CEO tenure on the firm, leaving a gap in our understanding of how CEOs' psychological traits interact with their tenure. Our findings underscore the significance of long-tenured CEOs' regulatory foci, especially the prevention focus, as a crucial motivational disposition.

Although our findings have several important contributions, this study is not free of limitations. First this study relied on data from the CEOs' annual letter to shareholders to measure CEO regulatory focus. Although we measured the CEOs' psychologic traits by conducting content analysis of letters to shareholders, this measurement could not fully capture CEOs' internal characteristics. Although the letter to shareholders is assumed to be written by the CEO, there is still a possibility that others may have coached the letters instead of the CEO. Therefore, future studies can be enriched if researchers could obtain other data such as in-depth interviews to get CEOs' internal mindset more specifically. Second, this study does not fully capture the impact of TMT members. As argued by Barron et al. (2011), both a CEO and the entire TMT members need to be considered because characteristics of TMT members might be key indicators of strategic change in a firm. Thus, future studies need to consider the how impacts of TMT members interact CEO tenure on strategic change. Lastly, the sample used in this study is only considered manufacturing firms operating in the U.S. Since the U.S. is a well-developed country, it is important to examine the relationship between CEO

tenure and strategic persistence in different countries such as developing countries. In addition, our dataset used for analysis is too outdated. The limitation lies in the fact that with overly outdated data, it is impossible to provide insights into the current changes in the business environment. As such, in the future research, the use of up-to-date data will be required.

In conclusion, our study demonstrates that CEO tenure impact strategic persistence. In addition, this relationship is moderated by CEO regulatory focus, especially prevention focus, and resource constraints. Such findings highlight the importance of CEOs' psychological traits and firm resources interactions. We argue that CEO tenure serves as a crucial indicator for anticipating strategic decisions, particularly in situations where CEOs exhibit hesitancy towards radical changes and firms confront resource scarcity.

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Conflicts of Interest

The authors declare no conflict of interest.

Author Contributions

S. H. and Y.S. significantly contributed to this paper. All authors have read and agreed to the final version of the manuscript.

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Appendix 1. Regulatory focus vocabulary

Regulatory focus	Words
Promotion focus	Accomplish, Achieve, Advancement, Aspiration, Attain, Desire, Earn, Expand, Gain, Grow, Hope, Hoping, Ideal, Improve, Increase, Momentum, Obtain, Optimistic, Progress, Promoting, Promotion, Speed, Swift, Toward, Velocity, Wish
Prevention focus	Accuracy, Afraid, Anxious, Avoid, Careful, Conservative, Defend, Duty, Escape, Escaping, Evade, Fail, Fear, Loss, Obligation, Ought, Pain, Prevent, Protect, Responsible, Risk, Safety, Security, Threat, Vigilance

Words are adopted from Gamache et al. (2015). Our dictionary also used alternative tenses of the words listed above.