



Leadership, team and decision speed: empirical study using cross-provincial data

Jiajun Gu

*School of Business Administration, Zhejiang Gongshang University,
Hangzhou, China*

Qingxiong Weng

*School of Management, University of Science and Technology of China,
Hefei, China, and*

Fenghua Xie

*School of Business Administration, Zhejiang Gongshang University,
Hangzhou, China*

Abstract

Purpose – The aim of this paper is to explore the relationship between leadership style, top management teams' (TMTs') behavioral integration, and strategic decision-making speed. It reveals how leadership impacts on team progress and strategic decision-making speed.

Design/methodology/approach – The sample was collected from more than ten provinces/cities in China. Factor analysis and structural equation model (SEM) were used to conduct the data.

Findings – The empirical study found that leadership style has a direct positive impact on the speed of strategic decision making, and an indirect positive impact on the speed of strategic decision making through the team behavior integration. The results of SEM show both leadership style and team behavior integration have a significant impact on strategic decision-making speed. It demonstrates that transformational leadership and transactional leadership have both direct and indirect impact on the speed of strategic decisions. Moreover, transformational leadership has a greater impact than transactional leadership on team behavior integration and strategic decision-making speed.

Originality/value – The study enriches the empirical test on the relationship between leadership, team and decision speed, therefore helping us further understand how to improve the speed of strategic decision-making.

Keywords China, Leadership, Decision making, Teams, Transformational leadership, Transactional leadership, Time-based competition, Top management team, Leadership style, Team behavioral integration, Strategic decision-making speed

Paper type Research paper

I. Introduction

In an era of time-based competition, strategic decision-making should not only be accurate, but also timely and swift. Slow decision-making is useless as well as erroneous when time becomes a significant factor in competitive advantage (Stalk, 1988).

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Fast strategic decision-making was repeatedly prescribed as a source of competitive advantage (Jone, 1993) and tested to be associated with organizational outcomes, including organizational performance (Bourgeois and Eisenhardt, 1988), innovation performance (Zehir and Özsahin, 2008) and firm growth and profit (Baum and Wally, 2003). In order to win the competitive advantage, the organizations therefore are required to have the ability to make strategic decision according to the rapidly changing environment accurately, as well as swiftly (Talaular *et al.*, 2005). Thus, making good decisions quickly is becoming an important strategic skill for top management teams in the new competitive environment.

In a heterogeneous executive team, the CEOs' leadership behavior should affect the other members' thinking and behavior. For example, a democratic leader who encourages subordinates to participate will fully mobilize team members' enthusiasm and allow them the freedom to express their views before making a decision. Such a leader also shares information with team members, promotes multi-channel communication and so on. In this way, leadership style may directly or indirectly affect team members' behavior and the process of strategic decision-making (Gu, 2009).

However, how does CEOs' leadership affect the strategic decision-making speed? What is the role of TMTs' behavioral integration in the relationship between leadership and decision-making speed? Considering these issues and using empirical research methods, this article attempts to reveal the mechanism of how transformational and transactional leadership affect TMT behavioral integration and strategic decision-making speed.

II. Theoretical background and hypotheses

Leadership style

Transformational leadership reflects a relationship between a leader and followers based on a set of leader behaviors perceived by subordinates and encompasses four distinct components: idealized influence, inspirational motivation, intellectual stimulation and individualized consideration (Avolio *et al.*, 1999; Bass *et al.*, 2003). According to Bass's (1985, 1990) discussion, transformational leaders focus on the employees' higher-order needs and motivate employees to do more than the intrinsic role required. They provide meaning, challenge, a sense of mission and higher vision, pay attention to the individual developmental, learning and achievement needs and motivate employees to transcend self-interest for the sake of the organization. Transformational leadership has been consistently positively related to many employee outcomes such as job satisfaction (Bass, 1985; Seltzer and Bass, 1990) and organizational commitment (Podsakoff *et al.*, 1996).

Bass (1985, 1990) also identified another type of leadership that conceptualized as transactional leadership, consisting of contingent reward and management by exception. Transactional leaders' role is instrumental rather than inspirational, which is based on the principle of exchange and functions to provide corresponding incentives or disincentives to obtain desired task outcomes (Gupta *et al.*, 2004). Transactional leaders pay attention to the clarification of tasks, work standards and outcomes. They focus on the organizational rewards and punishment to influence employee performance. In its more corrective form, the transactional leader would make specific standards for compliance and punish subordinates who are out of compliance with those standards (Bass and Avolio, 1997). Transactional leadership can build a base level

of trust in the leader as he/she clarifies expectations and rewards and reliably executes what has been agreed (Bass *et al.*, 2003). Briefly, transactional leaders influence their subordinates basing on bureaucratic authority and legitimacy associated with one's position within the organization. Bass's (1999) study indicated that transformational leadership has a more significant and positive correlation with individuals, groups and organizational performance, than transactional leadership in many areas (e.g. business, military, industrial, medical and education).

TMTs' behavioral integration

Hambrick (1994) first proposed the concept of behavioral integration and defined it as "the degree to which the group engages in mutual and collective interaction" (p. 188). Briefly, it amounts to the "characterization of group process" and the "multiway interchange within a group" (p. 189). Behavioral integration has three major elements, including one social dimension (collaborative behavior) and two task dimensions (quantity and quality of information exchanged and joint decision-making) (Hambrick, 1994, 1995). This way, it better seizes the team's level of wholeness and unity of effort (Hambrick, 1994; Ling *et al.*, 2008), compared with other team process constructs (e.g. cohesiveness, interdependence and social integration). For instance, a behaviorally integrated team could prevent a "groupthink" problem (Janis, 1982) better than a purely cohesive team, since both social and task processes should transcend single collaborative behavior. In Hambrick's subsequent research published in 1995, the association between TMT behavioral integration and organizational outcomes was first investigated, through CEO interviews and case studies. TMT behavioral integration received scholars' particular interest ever since (Mooney and Sonnenfeld, 2001; Simsek *et al.*, 2005; Carmeli and Halevi, 2009). For example, in an empirical research with 116 TMTs, Carmeli and Schaubroeck (2006) found that higher behavioral integration made better quality strategic decisions. The results also showed that behavioral integration of TMTs was negatively related to organizational decline both directly and indirectly through the perceived quality of strategic decisions.

Leadership, TMTs' behavioral integration and strategic decision-making speed

An efficient team was characterized as the team members being dedicated to teamwork and dealing with important events. Communication was crucial, since it was the prediction of team collaboration and efficiency (Shaw, 1981). Edmondson *et al.* (2003) suggested CEOs should actively participate in the team, so as to build interpersonal trust in the team and in turn increase the efficiency of strategic decision-making. It was found that directive leadership related to the low quality of decision-making because of the passive effect of groupthink (Mullen *et al.*, 1994). Likewise, research noted that leader's process directiveness is a potent predictor of quality of group process and outcomes, while leader's outcome directiveness was associated with a much smaller and less coherent array of group outcomes (Peterson, 1997). Cruz *et al.* (1999) admitted that directive leadership style had an important impact on the process of group information sampling. They proposed that leadership style impacted on the results of group decision-making, group members' perception of conflicts, self-confidence on decision-making and obedience to leaders. By conducting 40 four-person groups experiment, they found that both information distribution and leader decision did affect group decisions, individual post-discussion decisions and confidence in the

group decision. Another study indicated team leadership improved members' acceptance level of non-sharing information (Stasser *et al.*, 1995). Moreover, the team's leader is in charge of coordinating, integrating, guiding and motivating members in order to make team behaviors consistent and thus successfully achieve organizational goals. Based on the above research, we can infer that team leaders and their leadership styles should affect the process and outcomes of the team directly, as well as remarkably.

In this paper, we will examine the relationship between transformational/transactional leadership, TMTs' behavioral integration and strategic decision-making speed. The hypotheses of this research are shown in Table I.

III. Research methods and procedures

Sample

The data was collected from the executive team from Chinese corporations in different regions, including Beijing, Shanghai, Guangdong, Jiangsu, Zhejiang, Hubei, Hunan, Sichuan, Shaanxi, Henan, Guizhou and so on. A total of 864 surveys were distributed to 176 executive teams. Among the returned surveys, 139 sets with 612 surveys were valid. The effective response rate is 70.83 percent.

In the 139 teams, each team included at least six members. Of the participants who responded, 14 percent were female. Responding teams were from a wide range of regions (5.23 percent Beijing, 7.19 percent Shanghai, 11.93 percent Guangdong, 4.25 percent Jiangsu, 15.85 percent Zhejiang, 9.31 percent Hubei, 25.98 percent Hunan, 4.58 percent Sichuan, 6.05 percent Shaanxi, 4.25 percent Henan, 5.39 percent Guangxi).

Measures

The surveys were designed to capture the three concepts being investigated in this research: transformational and transactional leadership, behavioral integration and strategic decision-making speed. All of the items employed a five-point Likert scale format (1 – strongly disagree, 5 – strongly agree) unless otherwise indicated.

No. The contents of research hypotheses

<i>H1</i>	CEOs' transformational leadership is positively associated to TMTs' behavioral integration
<i>H1a</i>	Transformational leadership is positively associated to TMTs' collaborative behavior
<i>H1b</i>	Transformational leadership is positively associated to TMTs' information exchange
<i>H1c</i>	Transformational leadership is positively associated to TMTs' joint decision-making
<i>H1d</i>	Transformational leadership is positively associated to TMTs' effective communication
<i>H2</i>	CEOs' transactional leadership is positively associated to TMTs' behavioral integration
<i>H2a</i>	Transactional leadership is positively associated to TMTs' collaborative behavior
<i>H2b</i>	Transactional leadership is positively associated to TMTs' information exchange;
<i>H2c</i>	Transactional leadership is positively associated to TMTs' joint decision-making
<i>H2d</i>	Transactional leadership is positively associated to TMTs' effective communication
<i>H3</i>	CEOs' transformational leadership is positively associated to strategic decision-making speed
<i>H4</i>	CEOs' transactional leadership is positively associated to strategic decision-making speed
<i>H5</i>	TMTs' behavioral integration is positively associated to strategic decision-making speed
<i>H5a</i>	TMTs' collaborative behavior is positively associated to strategic decision-making speed
<i>H5b</i>	TMTs' information exchange is positively associated to strategic decision-making speed;
<i>H5c</i>	TMTs' joint decision-making is positively associated to strategic decision-making speed
<i>H5d</i>	TMTs' effective communication is positively associated to strategic decision-making speed

Table I.
The hypotheses of
this research

Measurement of transformational/transactional leadership. A four-item scale developed by McColl-kennedy and Anderson (2002) was used to measure transformational leadership. Items for this scale include "Gives personal attention to each team member", "Emphasizes the use of members' intelligence", "Increases members' level of enthusiasm" and "Transmits a sense of mission". Vera and Crossan's (2004) six-item scale was used to measure transactional leadership. Sample items include "Tell me what to do if I want to be rewarded by my efforts", "Only tells me what I have to know to do my job".

Measurement of behavioral integration. Adopting Hambrick's (1994, 1995) theory, Simsek *et al.* (2005) developed behavioral integration scales, consisting of three dimensions: collaborative behavior, information exchange and joint decision-making. However, Smith *et al.* (1994) and Tjosvold (1998) noted that effective team communication plays an important role in the process of team operation. Gu (2009, 2010) considered the scholars' suggestions, developed and tested a four dimension construct, adding effective communication as a new dimension. In this study, we used Gu's (2009, 2010) four dimension scales to measure behavioral integration. Sample items includes "When a team member is busy, other team members often volunteer to help manage the workload", "Team members usually exchange information to discuss and resolve the difficult problems", "Team members have a clear understanding of the joint problems and needs of other team members", "Team members communicate with each other frequently through informal manner".

Measurement of strategic decision-making speed. Wally and Baum (1994) pointed out that there were two methods to measure decision-making speed. First, record the detailed decision time in particular scene. Second, measure the participants' perception of strategic decision-making speed. We used the second method in this study. We revised the two scales of perception of decision-making speed from Judge and Miller's (1991) and Wally and Baum's (1994). The scale consists of five items, including "When our company faced with opportunity, we can react faster than the competitors", "Our competitors feel that we can respond to their actions quickly", "Facing industrial difficulties, we can react faster than the competitors throughout", "Our executive team meetings are efficient", "Our TMTs can easily unify their thinking on major issues and reach quick consensus". The coefficient α of the scale for this sample is 0.896.

IV. Research results

Factor analysis of leadership style

First, factor analysis was used to test the validity of transformational and transactional leadership scales. As shown in Table II, two factors were extracted in the principle components analysis followed by a varimax rotation. Corresponding with the original scales, four items loaded on the factor transformational leadership and six items loaded on the other factor. These two factors together explained 57.48 percent of the variance. All the item factor loadings varied from 0.646 to 0.894. These scales showed good reliability in this study with coefficient alphas for transformational leadership and transactional leadership being 0.804, 0.748, respectively.

Subsequently, we conducted a confirmatory factor analysis to further validate the measurement. The results are shown in Table III. The goodness index of confirmatory factor analysis fell within the acceptable range.

Item	Factor 1	Factor 2
<i>Factor 1: transformational leadership ($\alpha = 0.804$)</i>		
Increases members' level of enthusiasm	0.783	
Transmits a sense of mission	0.824	
Emphasizes the use of members' intelligence	0.894	
Gives personal attention to each team member	0.702	
<i>Factor 2: transactional leadership ($\alpha = 0.748$)</i>		
Whenever I feel like it, I can negotiate with him/he about what I can get from what I accomplish		0.646
I can act independently, but leaders do not encourage it		0.714
Close agreement between what I am expected to put into the team effort and what I can get out of it		0.877
Tells me what to do if I want to be rewarded for my efforts		0.831
Asks no more of me than what is absolutely essential to get the work done		0.747
Only tells me what I have to know to do my job		0.738
Percentage of variance	30.44	27.04

Table II.
The results of
exploratory factor
analysis of leadership
styles

	χ^2/df	RMSEA	GFI	AGFI	IFI	CFI
Goodness index	2.381	0.0042	0.931	0.911	0.952	0.951

Table III.
The goodness-of-fit
information for the
confirmatory factor
analysis

Spearman correlation between variables

The means, standard deviations and the spearman correlation coefficients for the study's variables are shown in Table IV. Strategic decision-making speed is positively related to the four dimensions of TMTs' behavioral integration, with the correlation coefficient of information exchange ($r = 0.593, p < 0.01$) being the highest, followed by effective communication ($r = 0.486, p < 0.01$) and collaborative behavior ($r = 0.371, p < 0.01$) and then joint decision-making ($r = 0.305, p < 0.01$). Strategic decision-making speed is also positively related to transformational leadership ($r = 0.407, p < 0.01$) and transactional leadership ($r = 0.255, p < 0.01$). Both transformational and transactional leadership are positively related to four dimensions of TMTs' behavioral integration. Moreover, transformational leadership is related to each dimension of behavioral integration with higher correlation coefficients.

Variable	Mean	SD	1	2	3	4	5	6	7
1. Transfor. leadership	3.947	0.415	1						
2. Transac. leadership	3.503	0.755	0.445**	1					
3. Collaborative behavior	3.439	0.373	0.540**	0.166**	1				
4. Information exchange	3.317	0.481	0.321**	0.134**	0.271**	1			
5. Joint decision-making	3.496	0.397	0.375**	0.167*	0.241**	0.453**	1		
6. Effe. communication	3.634	0.520	0.391**	0.272*	0.358**	0.302**	0.494**	1	
7. Speed	3.379	0.206	0.407**	0.255**	0.371**	0.593**	0.305**	0.486**	1

Note: Significant at: * $p < 0.05$ and ** $p < 0.01$

Table IV.
Descriptive statistics and
correlation matrix

Structural equation model

AMOS 5.0 software with maximum likelihood estimation was used to conduct structural equation modeling (SEM) to test the research hypotheses. SEM is advocated since it expands the explanatory ability and statistical efficiency for model testing within a single comprehensive method (Hair *et al.*, 1998). χ^2 statistics, the root-mean-square error of approximation (RMSEA), the non-normed fit index (NNFI) and the comparative fit index (CFI) were used to assess model fit (Bentler and Bonette, 1980). Both the NNFI and CFI with values in the upper 0.80s indicate an acceptable fit, while those over 0.90 indicate a good fit (Bryne, 2000). The RMSEA with values under 0.1 represent mediocre fit, values between 0.08 and 0.05 indicate responsible fit and those under 0.05 show a close fit to the approximation of .population (Bryne, 2000).

Based on the research assumption (Table I) and the results of the above correlation analysis, we constructed a structural equation model. Results of the final model after modification and the goodness index are shown in Figure 1 and Table V. The values obtained for GFI (0.912), the adjusted GFI (AGFI) (0.904) and the RMSEA (0.049) for the proposed model indicate a satisfactory fit. As shown in Figure 1, both transformational leadership and transactional leadership are positively associated with the four dimensions of behavioral integration. Transformational leadership has larger effects on each dimension of behavioral integration than transactional leadership. Among the four dimensions of behavioral integration, the joint decision-making ($\beta = 0.404, p < 0.001$) has the largest association with transformational leadership, followed by the effective communication ($\beta = 0.374, p < 0.001$) and information exchange ($\beta = 0.200, p < 0.01$) and the collaborative behavior ($\beta = 0.165, p < 0.01$) the lowest. The effective communication ($\beta = 0.178, p < 0.01$) has the largest association with transactional leadership and the collaborative behavior ($\beta = 0.097, p < 0.05$) the lowest.

Therefore, *H1* and *H2* are supported.

Moreover, the effect of transformational leadership ($\beta = 0.200, p < 0.01$) was greater than transactional leadership ($\beta = 0.107, p < 0.01$) on strategic decision-making speed

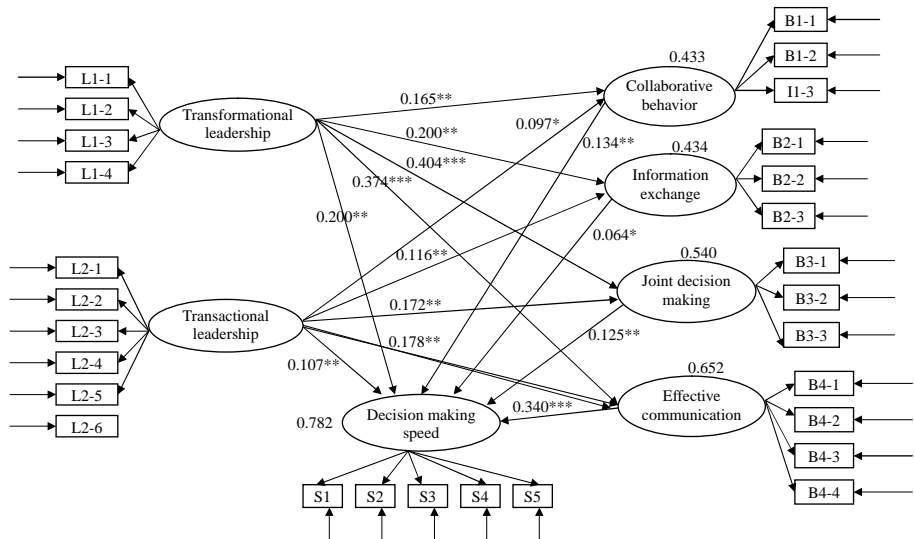


Figure 1.
The SEM of the relationship between transformational/transactional leadership, TMTs' behavioral integration and strategic decision-making speed

Assumption	Standardized path coefficient
<i>H1a</i> : transformational leadership → collaborative behavior	0.165 **
<i>H1b</i> : transformational leadership → information exchange	0.200 **
<i>H1c</i> : transformational leadership → joint decision-making	0.404 ***
<i>H1d</i> : transformational leadership → effective communication	0.374 ***
<i>H2a</i> : transactional leadership → collaborative behavior	0.097 *
<i>H2b</i> : transactional leadership → information exchange	0.116 **
<i>H2c</i> : transactional leadership → joint decision-making	0.172 **
<i>H2d</i> : transactional leadership → effective communication	0.178 **
<i>H3</i> : transformational leadership → strategic decision-making speed	0.200 ***
<i>H4</i> : transactional leadership → strategic decision-making speed	0.107 **
<i>H5a</i> : cooperative behavior → strategic decision-making speed	0.134 **
<i>H5b</i> : information exchange → strategic decision-making speed	0.064 *
<i>H5c</i> : joint decision-making → strategic decision-making speed	0.125 **
<i>H3d</i> : effective communication → strategic decision-making speed	0.340 ***
Goodness index: $\chi^2/df = 2.365$; RMSEA = 0.049; GFI = 0.912; AGFI = 0.904; IFI = 0.938; CFI = 0.937	

Table V.
The path coefficient sheet
of each research
hypothesis

Note: Significant at: * $p < 0.1$, ** $p < 0.05$ and *** $p < 0.01$

decision-making speed. Each dimension of behavioral integration also has a positive effect on strategic decision-making speed. Specifically, the role of effective communication ($\beta = 0.340, p < 0.001$) was largest, followed by cooperative behavior ($\beta = 0.134, p < 0.01$) and joint decision-making ($\beta = 0.125, p < 0.01$) and information exchange ($\beta = 0.064, p < 0.05$) the lowest. Thus, *H3*, *H4* and *H5* were supported.

V. Discussion

Although scholars pointed out the significance of speed in strategic decision-making speed, there is still little research to reveal the predictors of decision speed. This research demonstrates that CEOs' leadership has not only a direct effect, but also an indirect role through TMTs' behavioral integration, on the strategic decision speed.

First, this study tests the four dimension structure of behavioral integration. The results show that effective communication is a substantive factor of behavioral integration. It differentiates from information exchange, which reflects the channels and frequency of communication in teams. Effective communication is also associated with team member's emotional cognition.

Second, the research finds that both CEOs' leadership and TMTs' behavioral integration are positively associated to strategic decision-making speed. Talaulicar *et al.* (2005) argued that research on the determinants of strategic decision-making pace is somewhat more limited than research on comprehensiveness. This research develops the new predictors of strategic decision-making speed. Transformational and transactional leadership could influence the TMTs' decision method, decision process and the behavioral integration and then impacts decision speed.

Prior research showed that, higher degrees of conflict resolution (Hickson *et al.*, 1986) and a focus on gaining consensus (Dooley *et al.*, 2000), although considered aspects of effective decision-making, have all been shown to slow the decision process. Friction and communication problems were also considered to lead to make consensus difficult

and time consuming (Hambrick *et al.*, 1996; Zenger and Lawrence, 1989). Therefore, we can comprehend that why effective communication, among the four dimensions of behavioral integration, has the highest association with decision speed. In sum, high degree of members' behavioral integration may facilitate the team communication, reduce the team conflict, be easy to gain consensus and accelerate the decision-making speed.

Third, CEOs' leadership is positively associated to TMTs' behavioral integration. Transformational leadership is positively related to the density of both communication network and friendship (Zohar and Tenne-Gazit, 2008); and the richness of verbal communication and close relationship between top management members should therefore strengthen the frequency and the depth of the information exchange. Furthermore, transformational leaders' inspiration motivation may arouse shared vision and goal, high team cohesion and interpersonal trust among group members, which should motivate them to engage more intensive interaction, cooperate more closely with each other. Leaders with intellectual stimulation should encourage followers to discuss differing perspectives, seek new ways of completing assignment and re-think the ideas that have not been questioned in the past when making decision and solving problems. These would form the norm and climate tolerant of disagreement, which positively associates to mutual and collective interchange within groups. Transactional leaders control the power of rewards and punishments, which makes the TMTs clear of their roles and tasks and improve the collaboration within teams.

Implications from a Chinese management perspective

With the fast economy development and the promotion of globalization, Chinese corporations are facing with much more dynamic and high-velocity environment than ever before (Weng and McElroy, 2010), associated with increasingly frequent occurrence of major, discrete environmental shifts in competitive, technological, social and regulatory domains. In other words, the global market development has entered an era of time-based competition, in which the companies can achieve a powerful competitive advantage through speed by rapid response to consumer demand and new products and technologies introduced to the market (Stalk and Hout, 1990; Blackburn, 2012). The significance of strategic decision speed in organization has been identified. This research provides some theoretical basis for improving the corporations' strategic decision speed. First of all, CEOs' should learn how to respond quickly to market through their leadership behavior. As the results show, transformational leadership is positively associated with fast decision speed. Therefore, it is significant to develop leaders' abilities of idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. So that leaders could influence the TMTs' behavior and process effectively and promote the strategic decision-making speed. Moreover, corporations should pay more attention to the collocation of top manager team and provide corresponding conditions to advance their behavioral integration. For example, an increase in homogeneity, even simply through the shared perspective attained by passage of time together as a group, will enhance TMTs' behavioral integration.

Limitations and future directions

One limitation of this study was that we had no control over the industry category of corporation. And the importance of speed in the strategic decision should be different among industries. To research the predictors of strategic decision speed focusing

on one kind industry would be of more practical meanings. With so little research on the relationship between CEOs' leadership and strategic decision speed, this area is ripe for future research. Among potential topics is the notion of how leadership interacts with other determinants of strategic decision-making, such as leader-member exchange, team conflict, decision regulations, etc. Moreover, of interest is whether CEOs' leadership and TMTs' behavioral integration predicts other outcomes directly, such as the strategic decision-making quality and commitment. Additionally, it would be interesting to examine whether other leadership styles impact the TMTs' behavioral integration and the outcomes of strategic decision-making.

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Corresponding author

Qingxiong Weng and can be contacted at: wqx886@126.com